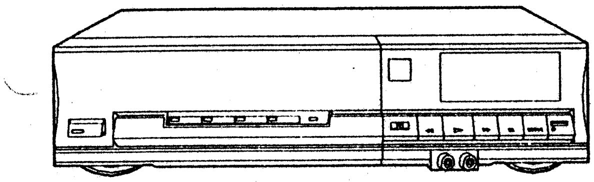
aiwa

HV-MG330S
HV-MG350S



VIDEO CASSETTE RECORDER

- BASIC VIDEO MECHANISM : TN-5900N2LRN-187
- TYPE. KE,DH (MG330S)
  K,Z (MG350S)

SERVICE MANUAL

MC-Service

S/M Code No. 09-930-034-001

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SPECIFICATIONS

MG330KE, DH

Recording/playback system
Video: Rotary 2 heads helical scan system
Audio: Fixed head

Video signal
PAL/MESECAM color signal, 625 lines, 50 fields
NTSC$_{3.58}$/NTSC$_{4.43}$ color signal, 525 lines, 60 fields

Recording time
PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
NTSC: 3 hours max. with T-180 tape (SP)

Playback time
PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
8 hours 40 minutes max. with E-260 tape (LP)
NTSC:
3 hours max. with T-180 tape (SP)
6 hours max. with T-180 tape (LP)
9 hours max. with T-180 tape (EP)

Fast forward/rewind time
Less than 300 sec. with E-180 tape

Tape speed
PAL/MESECAM:
23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
NTSC:
33.35 mm/sec. (SP)
16.67 mm/sec. (LP)
11.12 mm/sec. (EP)

Tape width
12.65 mm

Usable cassette
VHS video cassette

Timer display
24-hour cycle (am, pm), day, hour, minute, digital fluorescent display

Timer recording
6 programs within 2 weeks
1 program for weekly recording

Channel coverage

Model	System	Band	Channel range
KE	B/G D/K	L (VHF low)	R1 – R5
		H (VHF high)	R6 – R12
		U (UHF)	E21 – E69
DH	D/K	L (VHF low)	C1 – C5
		H (VHF high)	C6 – C12
		U (UHF)	C13 – C57
	I	L (VHF low)	E2 – E4
		H (VHF high)	E6 – E12
		U (UHF)	E21 – E69

RF output
UHF channel between 30 and 39

RF output level
75 dB ±3 dB

Video input
0.5 – 2.0 Vp-p, 75 ohms unbalanced

Video output
1.0 Vp-p, 75 ohms unbalanced

Horizontal resolution
PAL/MESECAM:
230 lines (nominal)
NTSC: 220 lines (nominal)

Video S/N (luminance)
42 dB (nominal)

Audio input
–8 dBs (nominal)/47 ohms unbalanced

Audio output
–8 dBs ± 3 dB, 3.3 kohms unbalanced

Audio frequency response
200 Hz – 8 kHz ± 4 dB (NTSC SP)
200 Hz – 6 kHz ± 4 dB (PAL SP)

Audio S/N
37 dB (NTSC SP nominal)

Operating temperature
5°C – 40°C

Power requirements
110 – 240 V AC, 50/60 Hz

Power consumption
26 watts

Dimensions
380 (W) × 96.(H) × 328 (D) mm
(15 × $3^{7}/_{8}$ × 13 inches)

Weight Approx. 5.2 kg (11 lb, 11 oz)

MG350K

Recording/playback system
Video: Rotary 2 heads helical scan system
Audio: Fixed head
Video signal PAL/MESECAM color signal 625 lines, 50 fields
$NTSC_{3.58}$/$NTSC_{4.43}$ color signal 525 lines, 60 fields
Recording time
PAL/MESECAM: 4 hours 20 minutes max. with E-260 tape, standard speed
NTSC: 3 hours max. with T-180 tape, standard speed
Playback time PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
8 hours 40 minutes max. with E-260 tape (LP)
NTSC:
3 hours max. with T-180 tape (SP)
6 hours max. with T-180 tape (LP)
9 hours max. with T-180 tape (EP)
Fast forward/rewind time
Less than 300 sec., with E-180 tape
Tape speed PAL/MESECAM:
23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
NTSC:
33.35 mm/sec. (SP)
16.67 mm/sec. (LP)
11.12 mm/sec. (EP)
Tape width 12.65 mm
Usable cassette
VHS video cassette
Timer display 24-hour cycle, day, hour, minute, digital fluorescent display
Timer recording
6 programs within 2 weeks
1 program for weekly recording
Channel coverage

SYSTEM	VHF	UHF
B/G, D/K I	1A – S2 S3 – W	E21 – US83

RF output UHF channel between 30 and 39
RF output level
73 dB ±3 dB
Video input 0.5 – 2.0 Vp-p, 75 ohms unbalanced
Video output 1.0 Vp-p, 75 ohms unbalanced
Horizontal resolution
PAL/MESECAM: 230 lines (nominal)
NTSC: 220 lines (nominal)
Video S/N (luminance)
42 dB (nominal)
Audio input –8 dBs (nominal)/47 k ohms unbalanced
Audio output –8 dBs ± 3dBs
3.3 k ohms unbalanced
Audio frequency response
200 Hz – 8 kHz ±4 dB (NTSC SP)
200 Hz – 6 kHz ±4 dB (PAL SP)
Audio S/N 37 dB (NTSC SP nominal)
Operating temperature
5°C – 40°C
Power requirements
110 – 240 V AC, 50/60 Hz
Power consumption
26 watts
Dimensions 380 (W) × 96 (H) × 328 (D) mm
(15 × $3\frac{7}{8}$ × 13 inches)
Weight Approx. 5.2 kg (11 lb 7 oz)

MG350Z

Recording/playback system
Video: Rotary 2 heads helical scan system
Audio: Fixed head
Video signal PAL/MESECAM color signal 625 lines, 50 fields
$NTSC_{3.58}$/$NTSC_{4.43}$ color signal 525 lines, 60 fields
Recording time
PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape standard speed
NTSC:
3 hours max. with T-180 tape, standard speed
Playback time PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
8 hours 40 minutes max. with E-260 tape (LP)
NTSC:
3 hours max. with T-180 tape (SP)
6 hours max. with T-180 tape (LP)
9 hours max. with T-180 tape (EP)
Fast forward/rewind time
Less than 300 sec., with E-180 tape
Tape speed PAL/MESECAM:
23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
NTSC:
33.35 mm/sec. (SP)
16.67 mm/sec. (LP)
11.12 mm/sec. (EP)
Tape width 12.65 mm
Usable cassette
VHS video cassette
Timer display 24-hour cycle, day, hour, minute, digital fluorescent display
Timer recording
6 programs within 2 weeks
1 program for weekly recording
Channel coverage

System	Main regions	Channel range		
		VHF Low (CATV)	VHF High (CATV)	UHF
B/G	Western Europe (CCIR ch)	E2 – E4 (E2 – S1)	E5 – E12 (S2 – S20)	21 – 69
I	IRELAND U.K	A – C (A – C)	D – J (C2 – J)	21 – 69
D/K	Eastern Europe (OIRT ch) CHINA	R1 – R5 C1 – C5	R6 – R12 C6 – C12	C13 – C57

RF output UHF channel between 30 and 39
RF output level 70dB ± 3dB
Video input 0.5 – 2.0 Vp-p, 75 ohms, unbalanced
Video output 1.0 Vp-p, 75 ohms, unbalanced
Horizontal resolution
PAL/MESECAM: 230 lines (nominal)
NTSC: 220 lines (nominal)
Video S/N (luminance)
42 dB (nominal)
Audio input –8 dBs (nominal)/47 k ohms, unbalanced
Audio output –8 dBs ± 3 dB
3.3 k ohms, unbalanced
Audio frequency response
200 Hz – 8 kHz ± 4 dB (NTSC SP)
200 Hz – 6 kHz ± 4 dB (PAL SP)
Audio S/N 37 dB (NTSC SP nominal)
Operating temperature
5°C – 40°C
Power requirements
110 – 240 V AC, 50/60 Hz
Power consumption
26 watts
Dimensions 380 (W) × 96 (H) × 328 (D) mm
(15 × $3\frac{7}{8}$ × 13 inches)
Weight Approx. 5.2 kg (11 lb 7 oz)

- Design and specifications are subject to change without notice.

STANDARD MAINTENANCE

1. SERVICE SCHEDULE OF COMPONENT

○ : Check ● : Change

DECK		Periodic Service Schedule			
Ref. No.	Parts Name	1000 h	2000 h	3000 h	4000 h
2-2	UPPER DRUM	○	●	○	●
2-5	DRUM EARTH			●	
3-5	BT BAND ASSY		●		●
3-17	CAPSTAN MOTOR ASSY		●		●
3-25	REEL ASSY			●	
4-6	PINCH ROLLER A		●		●
4-21	ACE HEAD HV224206			●	
4-41	BRAKE SHOE		●		●
4-46	LM ASSY			●	
4-49	FE HEAD			●	
5-8	DRIVE BELT		●		●
5-19	CLUTCH ASSY		●		●
5-26	FL BELT		●		●
6-1	LOADING BELT		●		●
6-22	MAIN BELT		●		●

NOTE :

1. Clean all parts for the tape transport.
   Upper Drum with video head/Pinch Roller
   Audio Control Head
2. After cleaning up the parts, perform all DECK ADJUSTMENT.

2. CLEANING

1. Cleaning of "Video Head" (See Figure – 1)
   Head cleaning by using a chamois skin.

– Procedure –
1) Remove the "Cabinet, Steel".
2) Put on a glove (thin type) to avoid touching the "Upper Drum" and "Lower Drum" with bare hand.
3) Put a few drops of alcohol on the chamois skin, and by slightly placing it against the "Head Tip", allow the "Upper Drum" to turn the right and left.

– Remark –
1) The video head is of very hard material, but since it is very thin, avoid cleaning it vertically.
2) Wait for the cleaned part to dry out, before operating the unit.
3) Do not reuse stained chamois skin.

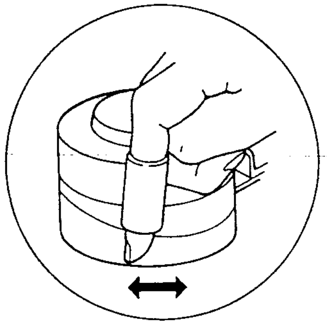


Fig. – 1

2. Cleaning of "ACE Head" (See Figure – 2)
   Head cleaning by using a chamois skin.

– Procedure –
1) Remove the "Cabinet, Steel".
2) Put a few drops of alcohol on the chamois skin, clean up the "Audio Control Head", being careful not to damage the "Upper Drum" and other tape running parts.

– Remark –
1) Avoid cleaning "ACE Head" vertically.
2) Wait for the cleaned part to dry well, before operating the unit.

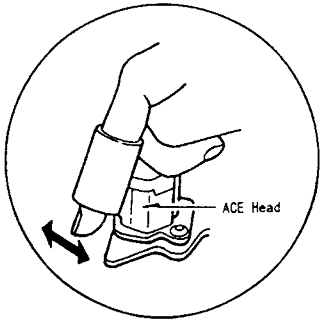


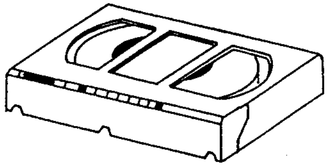
Fig. – 2

SERVICE JIG AND TOOLS

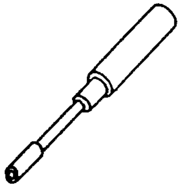
1. SERVICE JIG AND TOOLS

Ref. No.	Name	Adjustment
J-1	Torque Meter (FSJ-VHT-063)	Back Tension
J-2	Special Driver (SMALL)	Tape Running position, FM Envelope
J-3	Special Driver (LARGE)	X Value
J-4	Mirror	Tape Transportation Check
J-5	Alignment Tape (TTV-P2L, TTV-N2E)	X Value, FM Envelope
J-6	Alignment Tape (TTV-P1, TTV-N1)	ACE Head Height/ACE Head Tilt
J-7	Box Driver M3	Tape Running position, X Value, Envelope Wave Form
J-8	EXT. PCB. KIT [A] (Parts No. 09-054-012-010)	HA (For repair of circuit board)
J-9	Alignment Tape (TTV-P2, TTV-N2)	ACE Head Azimuth

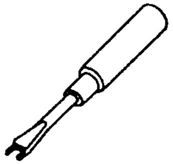
J − 1, J − 5, J − 6, J − 9



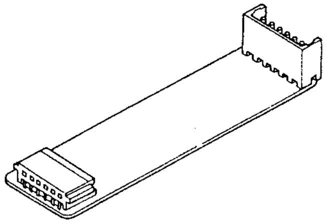
J − 7



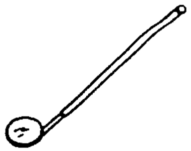
J − 2, J − 3



J − 8



J − 4



2. HOW TO ASSEMBLE THE JIGS

1. Assembling the J − 8. (See Figure − 1)

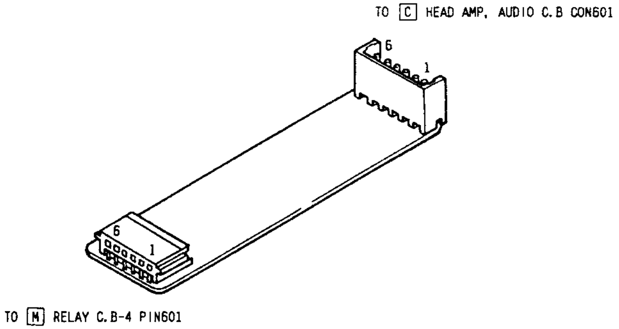

TO C HEAD AMP, AUDIO C.B CON601
6
1
6
1
TO M RELAY C.B-4 PIN601

Fig. − 1

Place the circuit board with the solder side down as shown in the figure above and assemble the connectors, taking care of their directions.

3. HOW TO USE THE JIGS

1. Using the J − 8 (See Figure − 1)

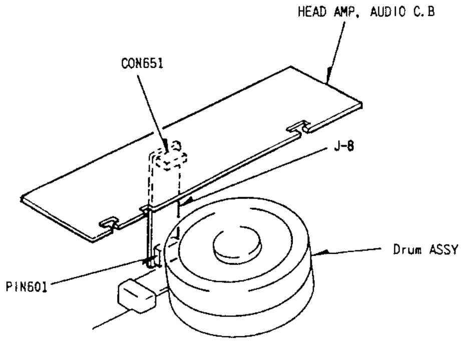

HEAD AMP, AUDIO C.B
CON651
J-8
Drum ASSY
PIN601

Fig. − 1

Use this jig when serving the "HEAD AMP. AUDIO C.B".

DISASSEMBLY INSTRUCTION

1. "Cabinet Front ASSY" Removal (See Figure – 1)
   1) Remove 4 screws (Ⓐ) holding the "Cabinet, Steel".
   2) Remove 8 screws (Ⓑ) holding the "Plate, Bottom".
   3) Remove 3 screws (Ⓒ) and releases 5 hooks to remove the "Cabinet Front ASSY" in the direction of the arrow.

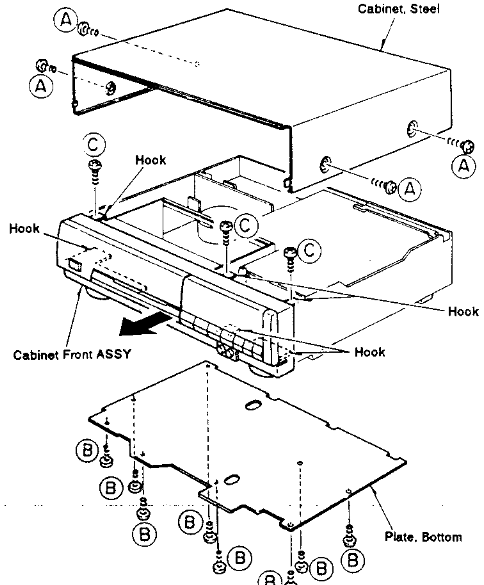

Ⓐ
Cabinet, Steel
Ⓐ
Ⓐ
Ⓐ
Ⓒ
Hook
Hook
Ⓒ
Ⓒ
Hook
Cabinet Front ASSY
Hook
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Plate, Bottom

Fig. – 1

2. "Power Unit ASSY" and "Main C. B" Removal (See Figure – 2)
   1) Remove 6 screws (Ⓐ) holding the "Main C. B".
   2) Remove 2 screws (Ⓑ) and 2 screws (Ⓒ) holding the "Power Unit ASSY".

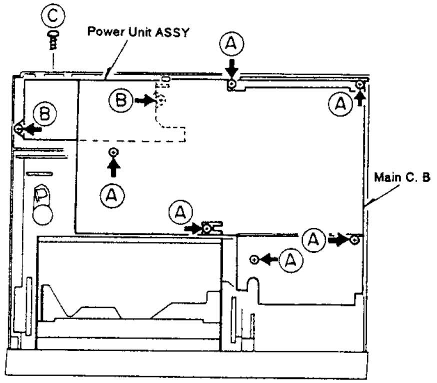

Ⓒ
Power Unit ASSY
Ⓐ
Ⓑ
Ⓐ
Ⓑ
Ⓐ
Main C. B
Ⓐ
Ⓐ
Ⓐ

Fig. – 2

3. "Mechanism ASSY" Removal (See Figure – 3)
   1) Remove screw (Ⓐ) and disconnect the connector to remove the "Preamp/Audio C. B" in the direction of the arrow.
   2) Remove 3 screws (Ⓑ) holding the "Mechanism ASSY".

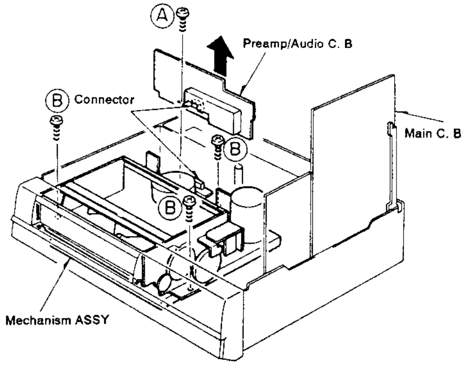

Ⓐ
Preamp/Audio C. B
Ⓑ Connector
Ⓑ
Main C. B
Ⓑ
Mechanism ASSY

Fig. – 3

4. "Front Loading ASSY" Removal (See Figure – 4)
   1) Remove "Main Belt".
   2) Remove 4 screws (Ⓐ).
   3) Release the hooks on both sides and remove the "Front Loading ASSY". (Since it is difficult to release these hooks, hold the front of the "Front Loading ASSY" and shake it up and down to release them.)

5. "Cassette Load Bracket ASSY" Removal (See Figure – 4)
   1) Remove 1 screw (Ⓑ).
   2) Take off the "Cassette Load Bracket ASSY".

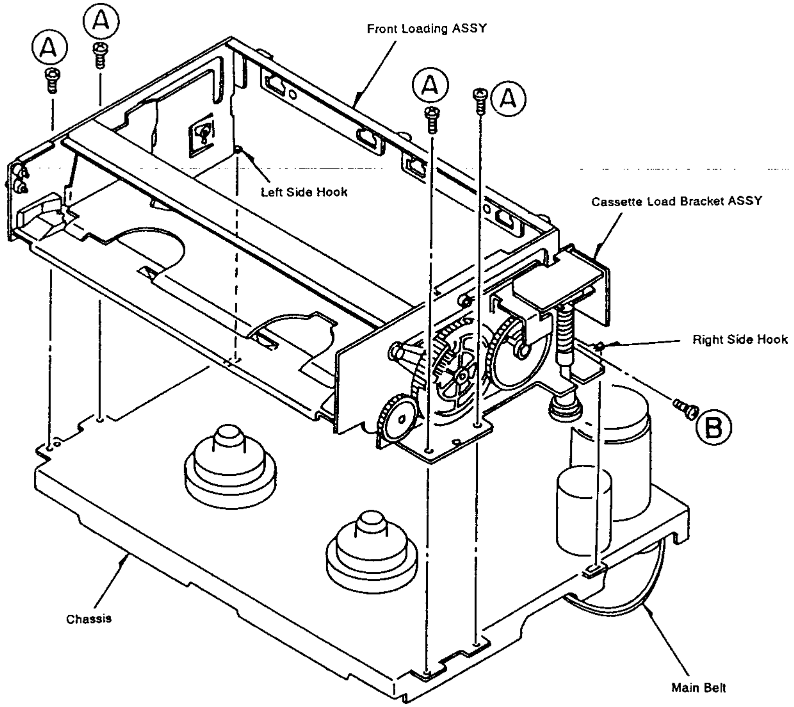

Ⓐ
Ⓐ
Front Loading ASSY
Ⓐ
Ⓐ
Left Side Hook
Cassette Load Bracket ASSY
Right Side Hook
Ⓑ
Chassis
Main Belt

Fig-4

6. “Photo Sensor ASSY” Removal (See Figure – 5)

6 – 1. “Lamp Holder ASSY” Removal

1) Remove 1 screw (Ⓐ) and take off the “T Soft Brake ASSY”, “T – Spring, Soft Brake Arm”.
2) Release the “Lamp Holder ASSY” from hook (a) of the chassis and turn it counterclockwise to remove it from the chassis.

6 – 2. “Switch C. B”, “Sensor Guide” and “Start Sensor C. B” Removal

1) Remove 1 screw (Ⓑ) and take off the “Switch C. B”.
2) Remove 1 screw (Ⓒ) and take off the “Sensor Guide”.
3) Remove 1 screw (Ⓓ) and take off the “Start Sensor C. B”.

6 – 3. “Sensor Guide” and “End Sensor C. B” Removal

1) Remove 1 screw (Ⓔ) and take off the “Sensor Guide”.
2) Remove 1 screw (Ⓕ) and take off the “End Sensor C. B”.

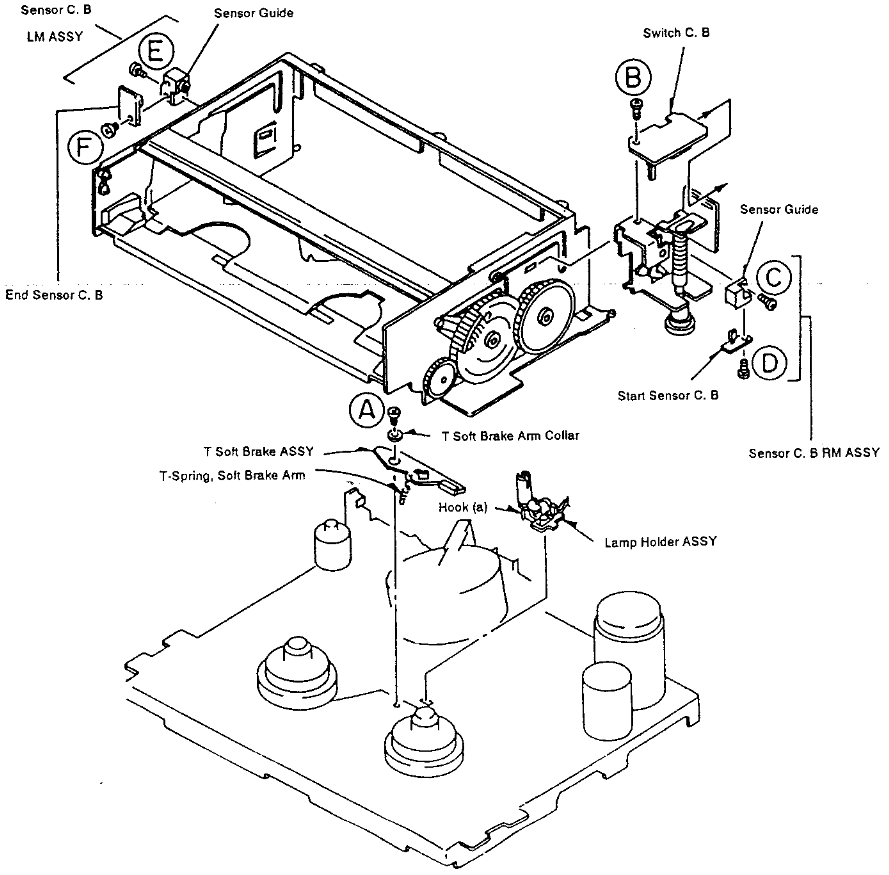

Sensor C. B
LM ASSY
Sensor Guide
Ⓔ
Ⓕ
Switch C. B
Ⓑ
Sensor Guide
Ⓒ
Ⓓ
End Sensor C. B
Start Sensor C. B
Ⓐ
T Soft Brake Arm Collar
T Soft Brake ASSY
T-Spring, Soft Brake Arm
Hook (a)
Lamp Holder ASSY
Sensor C. B RM ASSY

Fig-5

7. “FE Plate” and “ACE Head” Removal (See Figure – 6)

1. “FE Plate” Removal

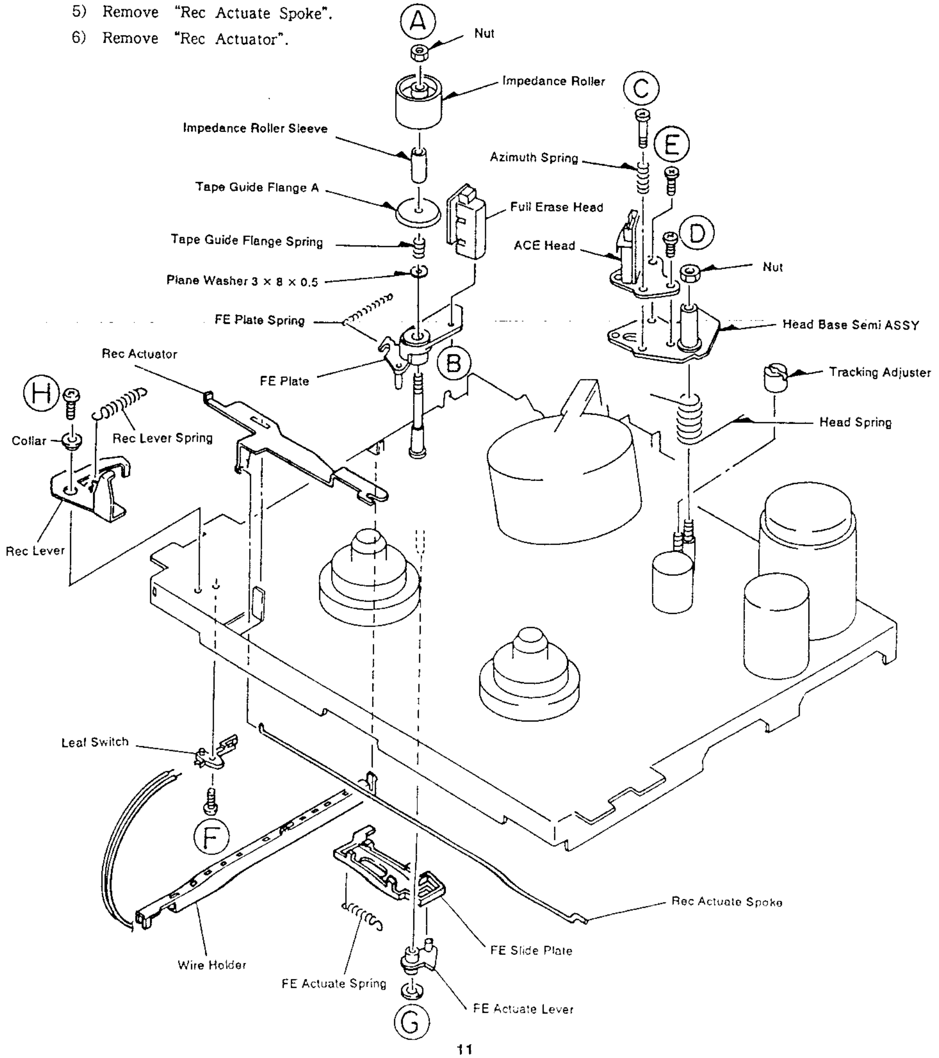
1) Remove Nut (Ⓐ).
2) Take out the “FE Plate Spring” and pull up the “FE Plate”.
3) Remove 1 screw (Ⓑ) and take off the “Full Erase Head”.

2. “ACE Head” Removal

1) Remove 2 screws (Ⓒ × 1, Ⓓ × 1) and “Azimuth Spring”.
2) Remove 1 screw Ⓔ and “ACE Head”.

8. “Rec Actuator” Removal (See Figure – 6)

1) Remove “Wire Holder”.
2) Remove screw (Ⓕ) and take off the “Leaf Switch”.
3) Remove screw (Ⓖ) and take off the “FE Actuate Lever”, “FE Slide Plate” and “FE Actuate Spring”.
4) Remove screw (Ⓗ) and take off the “Rec Lever”, and “Rec Lever Spring”.
5) Remove “Rec Actuate Spoke”.
6) Remove “Rec Actuator”.


Ⓐ
Nut
Impedance Roller
Ⓒ
Ⓔ
Impedance Roller Sleeve
Azimuth Spring
Tape Guide Flange A
Full Erase Head
Tape Guide Flange Spring
ACE Head
Ⓓ
Plane Washer 3 × 8 × 0.5
Nut
FE Plate Spring
Head Base Semi ASSY
Rec Actuator
FE Plate
Ⓑ
Tracking Adjuster
Ⓗ
Collar
Rec Lever Spring
Head Spring
Rec Lever
Leaf Switch
Ⓕ
Rec Actuate Spoke
FE Slide Plate
Wire Holder
FE Actuate Spring
FE Actuate Lever
Ⓖ

9. "Reel Drive Gear" Removal (See Figure – 7)
1) Remove the "Front Loading ASSY".
2) Remove "Drive Belt".
3) Remove Poly – Washer (Ⓐ) and "Middle Pulley ASSY".
4) Remove 3 screws (Ⓑ× 1, Ⓒ× 2) and take off the "Sub Plate ASSY".
5) Remove Nylon – Washer (Ⓓ) and take off the "Clutch ASSY".
6) Remove 1 screw (Ⓔ) and take off the "T – Spring, Soft Brake Arm".
7) Take off the "T Soft Brake ASSY".
8) Remove 2 "E – Rings (Ⓕ)" and take off the 2 "Reel Drive Gear".

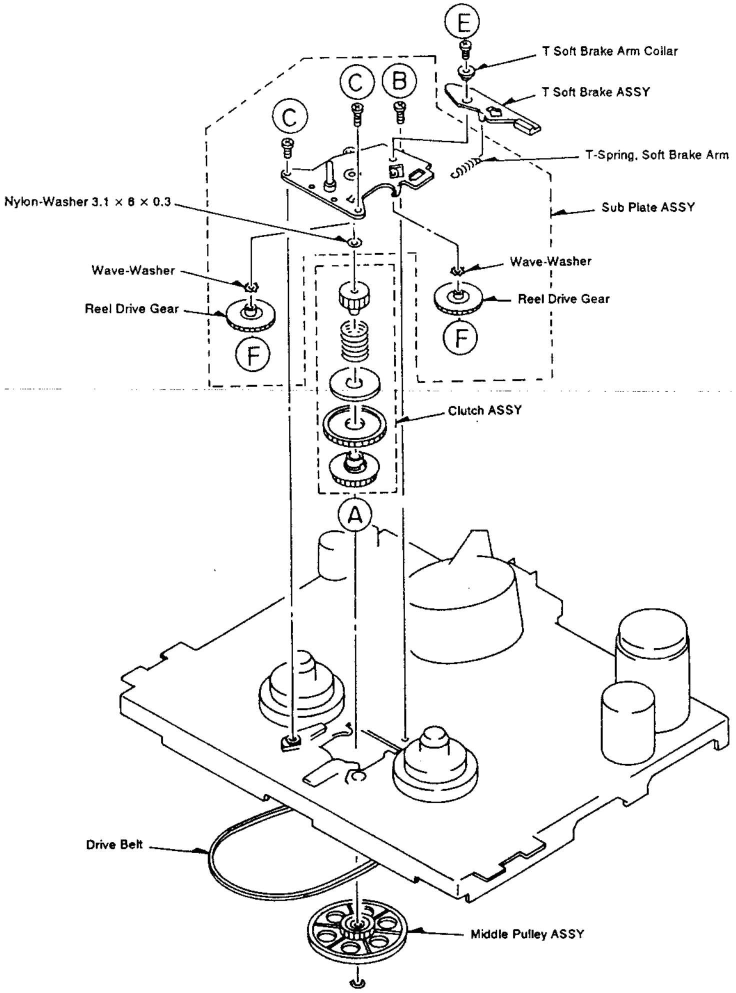

Ⓔ
T Soft Brake Arm Collar
Ⓒ
Ⓑ
T Soft Brake ASSY
Ⓒ
T-Spring, Soft Brake Arm
Sub Plate ASSY
Nylon-Washer 3.1 × 6 × 0.3
Wave-Washer
Wave-Washer
Reel Drive Gear
Reel Drive Gear
Ⓕ
Ⓕ
Clutch ASSY
Ⓐ
Drive Belt
Middle Pulley ASSY

Fig.-7

10. "BT Band ASSY" And "BT Arm Semi ASSY" Removal (See Figure – 8)
1) Remove the "Front Loading ASSY".
2) Remove Poly – Washer (Ⓐ) and "BT Actuate Plate Spring" from the "BT Arm Semi ASSY".
3) Remove 1 screw (Ⓑ) and "Band Holder Spring".
4) Take off the "BT Band ASSY" from the "BT Arm Semi ASSY".

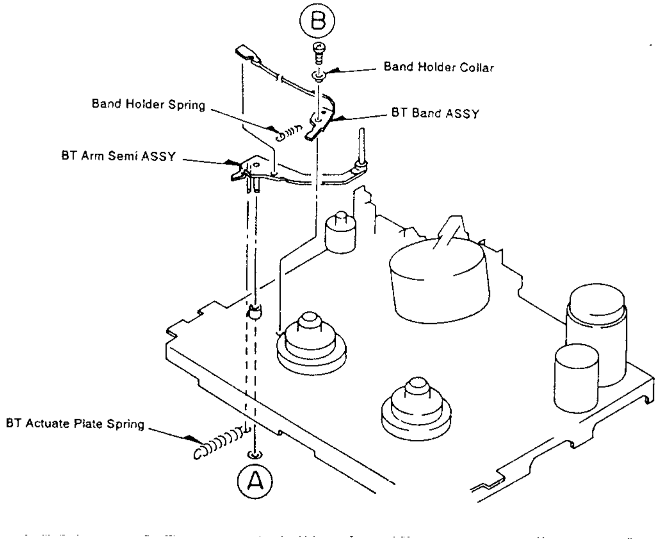

Ⓑ
Band Holder Collar
Band Holder Spring
BT Band ASSY
BT Arm Semi ASSY
BT Actuate Plate Spring
Ⓐ

Fig.-8

11. "Reel ASSY" Removal (See Figure – 9)
1) Remove the "Front Loading ASSY", "Gear Holder ASSY" and "BT Band ASSY".
2) Remove 1 screw (Ⓐ) and the "Back Tension Support".
3) Remove the 2 "Reel ASSY".

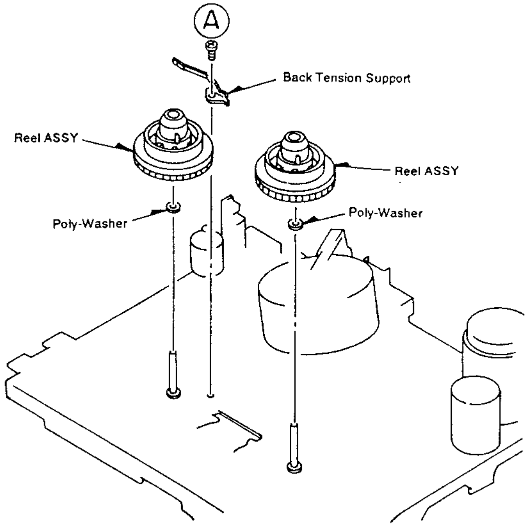

Ⓐ
Back Tension Support
Reel ASSY
Reel ASSY
Poly-Washer
Poly-Washer

Fig.-9

12. "Cylinder ASSY" Removal (See Figure – 10)

1) Remove the "Front Loading ASSY".
2) Pull out the "RELAY C. B – 5" from the "Cylinder Motor TM85".
3) Remove 1 screw (Ⓐ) and take off the "Drum Earth".
4) Remove 3 screws (Ⓑ) and take off the "Cylinder ASSY".

= Remarks =

Take off the "Cylinder ASSY" carefully without any damage.

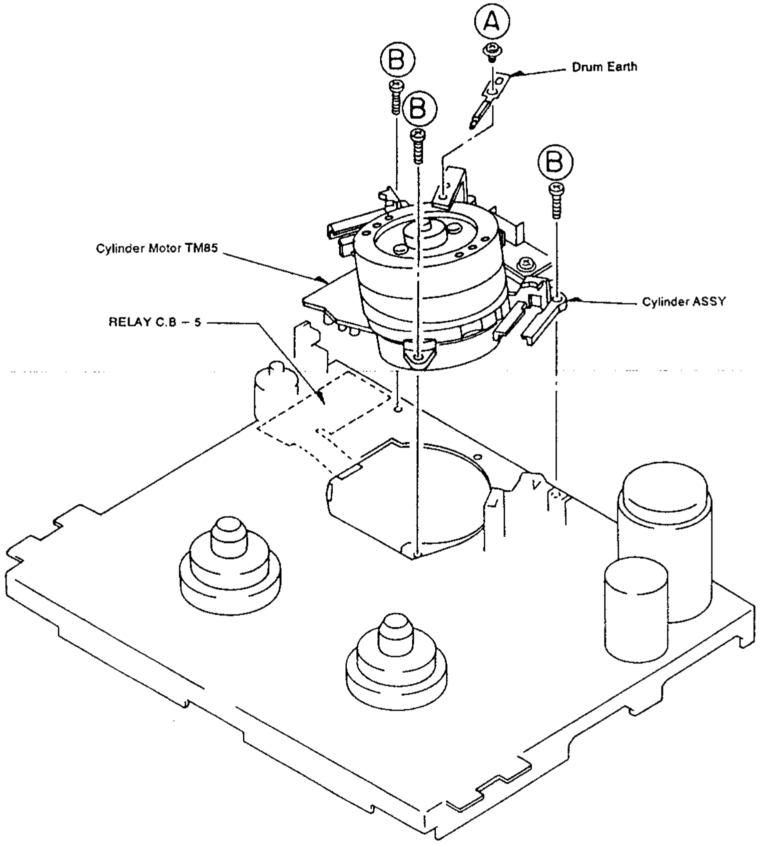

Ⓐ
Ⓑ
Ⓑ
Ⓑ
Drum Earth
Cylinder Motor TM85
RELAY C.B – 5
Cylinder ASSY

Fig.-10

13. "Upper Drum" Removal (See Figure – 11)

1) Remove the "Front Loading ASSY".
2) Remove 1 screw (Ⓐ) and take off the "Drum Earth Bracket".
3) Remove 2 screws (Ⓑ) and take off the "Upper Drum" in the direction of the arrow.

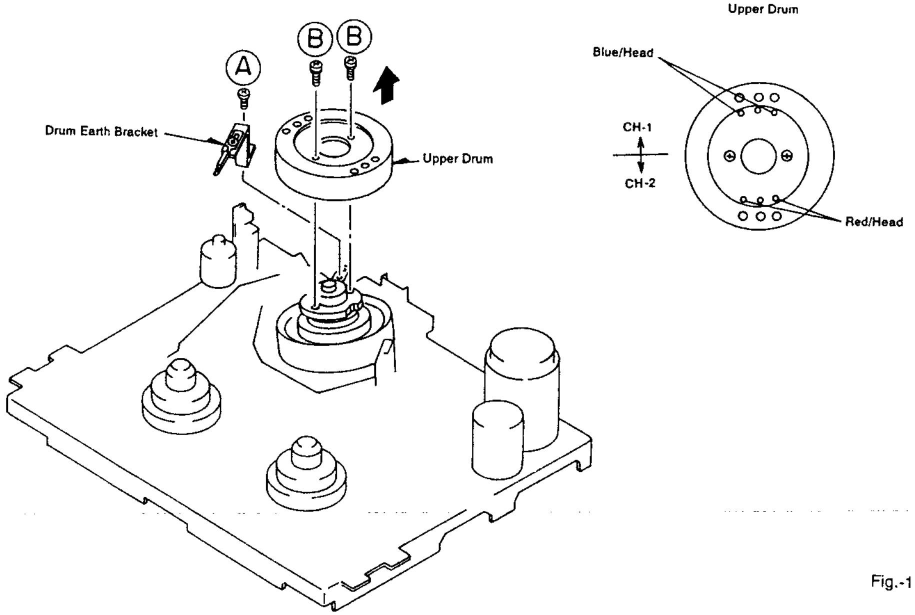

Ⓐ
Ⓑ
Ⓑ
Drum Earth Bracket
Upper Drum
Upper Drum
Blue/Head
CH-1
CH-2
Red/Head

Fig.-11

= Remark =

1. Use gloves and do not touch the drum surface with bare fingers.
2. If the Video head is defective, replace the complete "Upper Drum" with the Head.
3. When installing "Upper Drum" and "Rotor", "Upper Drum" point ⓐ, "Lower Drum" point ⓑ and "Rotor" point ⓒ, these point ⓐ, ⓑ, ⓒ mast line up each other. Otherwise it will creates problem. (See Figure – 11 – 1)

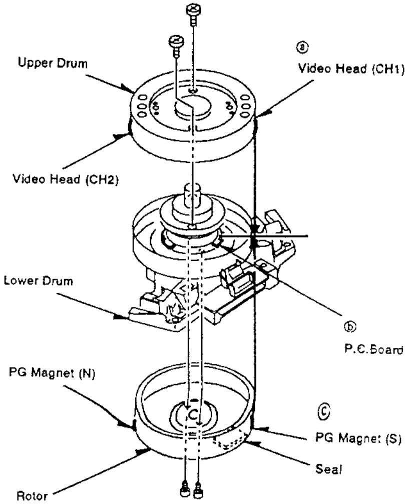
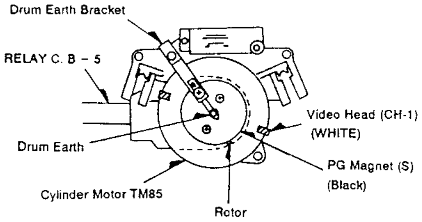

Upper Drum
ⓐ
Video Head (CH1)
Video Head (CH2)
Lower Drum
ⓑ
P.C.Board
PG Magnet (N)
ⓒ
PG Magnet (S)
Seal
Rotor

Fig.-11-1

14. "Cylinder Motor TM82" Removal (See Figure - 12)
   1) Pull out the "RELAY C. B - 5" from the "Cylinder Motor TM85".
   2) Remove 2 screws (Ⓐ) and take off the "Cylinder Motor TM85a".
   3) Remove 3 screws (Ⓑ) and take off the "Cylinder Motor TM85b".


Drum Earth Bracket
RELAY C. B - 5
Video Head (CH-1) (WHITE)
Drum Earth
PG Magnet (S) (Black)
Cylinder Motor TM85
Rotor

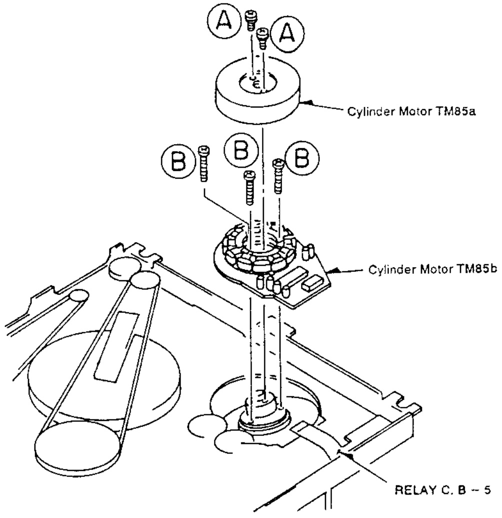

Ⓐ
Ⓐ
Cylinder Motor TM85a
Ⓑ
Ⓑ
Ⓑ
Cylinder Motor TM85b
RELAY C. B - 5

Fig.-12

15. "Capstan Motor ASSY" and "LM ASSY" Removal (See Figure - 13)
   1. "Capstan Motor ASSY" Removal
      1) Take off the "Drive Belt" and "Main Belt".
      2) Remove 2 screws (Ⓐ) and take off the "Capstan Motor ASSY".
   2. "LM ASSY" Removal
      1) Take off the "Fl Belt".
      2) Remove 2 screws (Ⓑ) and take off the "LM ASSY".

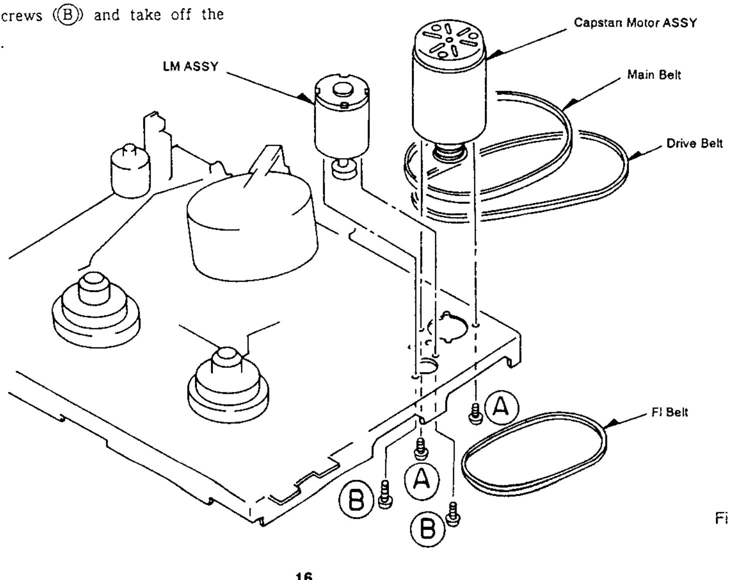

LM ASSY
Capstan Motor ASSY
Main Belt
Drive Belt
Fl Belt
Ⓐ
Ⓐ
Ⓑ
Ⓑ

Fig.-13

16. "Loading Gear" and "Loading Cam" Removal (See Figure - 14)
   1) Take off the "Loading Belt" from the "Loading Pulley".
   2) Remove Poly - Washer (Ⓐ) and take off the "Loading Pulley".
   3) Remove Poly - Washer (Ⓑ) and take off the "Loading Gear".
   4) Remove Poly - Washer (Ⓒ) and take off the "Eject Arm" and the "Brake Actuate Arm".
   5) Remove 2 screws (Ⓓ), and take off the "Loading Lever Reinforce Plate" and the "Loading Lever ASSY".
   6) Take off the "Loading Cam".

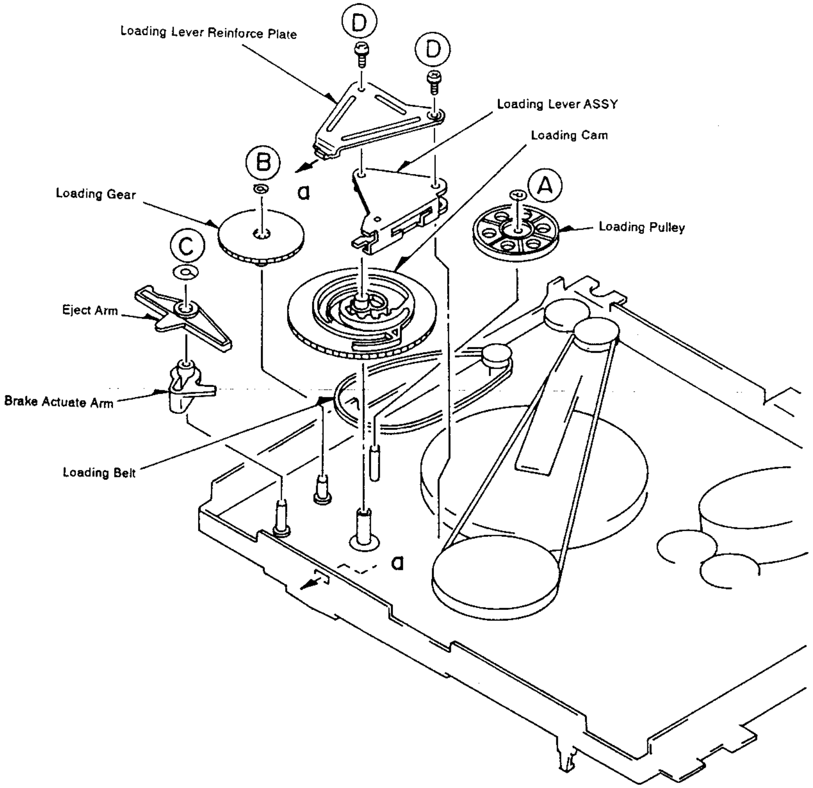

Loading Lever Reinforce Plate
Ⓓ
Ⓓ
Loading Lever ASSY
Loading Cam
Ⓑ
a
Ⓐ
Loading Gear
Loading Pulley
Ⓒ
Eject Arm
Brake Actuate Arm
Loading Belt
a

Fig.-14

17. "Flywheel Capstan" Removal (See Figure – 15)

1) *Remove the Nylon – Washer (Ⓐ).*
2) Take off the "Drive Belt" and "Main Belt".
3) Remove 2 screws (Ⓑ) and take off the "FL Angle ASSY".
4) Take off the "Flywheel Capstan".

≡ Remark ≡

Do not miss the Poly – Washer (Ⓒ) when pulling out the "Flywheel Capstan".

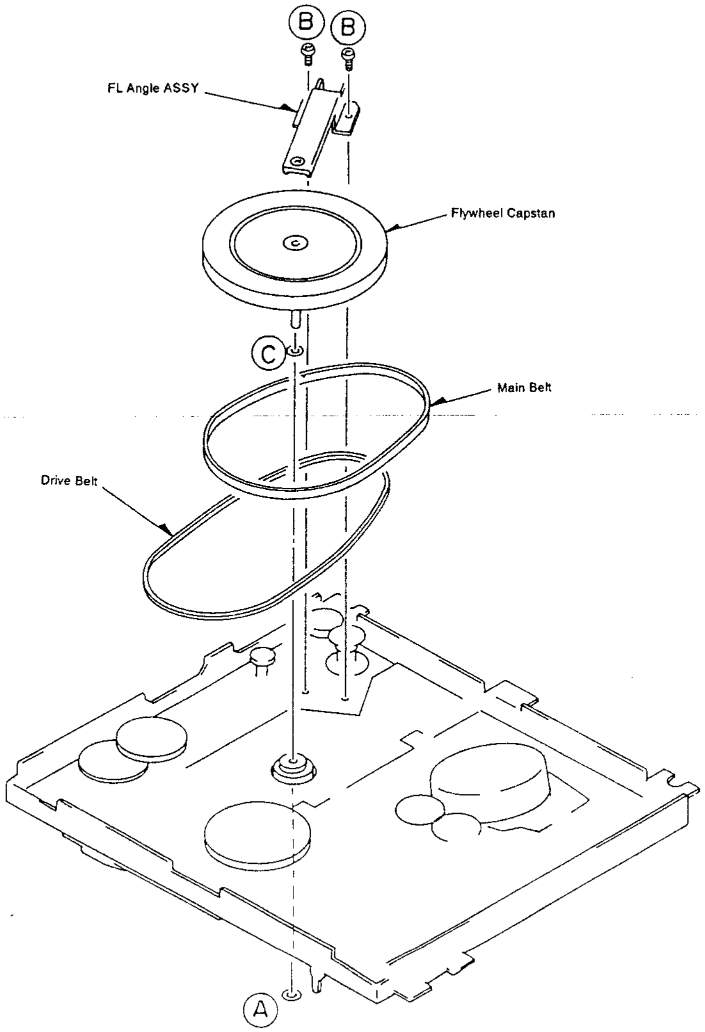

Ⓑ
Ⓑ
FL Angle ASSY
Flywheel Capstan
Ⓒ
Main Belt
Drive Belt
Ⓐ

Fig.-15

18. "Reel Sensor" Removal (See Figure – 16)

1) Remove "Front Loading ASSY" and the "Gear Holder ASSY".
2) Remove "Reel ASSY".
3) Remove "Reel Sensor".

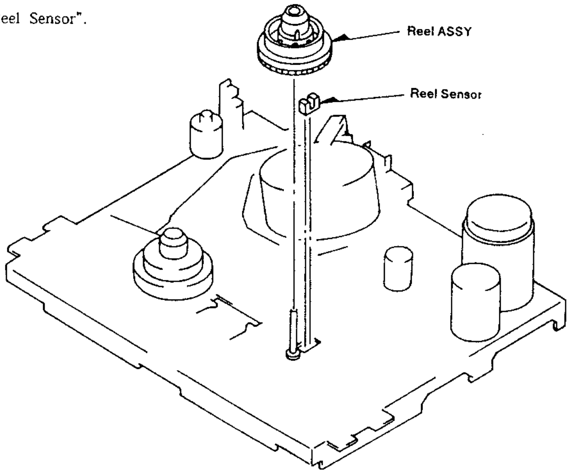

Reel ASSY
Reel Sensor

Fig.-16

19. "Loading Base Semi ASSY" Removal (See Figure – 17)

1) Remove "Cylinder ASSY", "BT Arm Semi ASSY", "BT Band ASSY" and "Front Loading ASSY".
2) Remove 1 screw (Ⓐ) and "L Gear Plate Collar", "L Gear Plate".
3) Remove 2 screws (Ⓑ).
4) Take off the "Loading Base Semi ASSY".

= Remark =

When installing the "L Gear Plate", align markings ⓐ on the "T Loading Gear L" and "L Gear Plate".

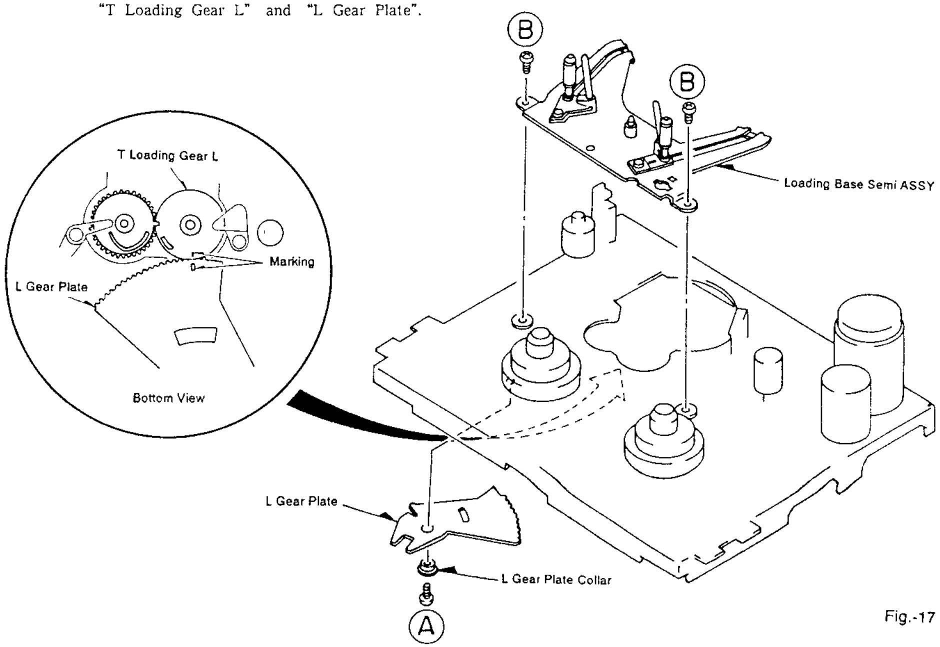

Ⓑ
Ⓑ
Loading Base Semi ASSY
T Loading Gear L
Marking
L Gear Plate
Bottom View
L Gear Plate
L Gear Plate Collar
Ⓐ

Fig.-17

20. "Wormwheel ASSY" Removal (See Figure – 18)

1. Disassembly
   1) Remove "Front Loading ASSY".
   2) Remove "Cassette Load Bracket ASSY".
   3) Remove E – Ring (Ⓐ).
   4) Remove "Wormwheel ASSY." ("Wormwheel", "Friction Spring", "Friction Gear")
2. Assembly
   1) Turn the "Lift Gear R" fully counterclockwise.
   2) Restore "Wormwheel ASSY" to the stud.

= Remark =

Match "Lift Gear R" to the "Wormwheel Hole" as illustrated.

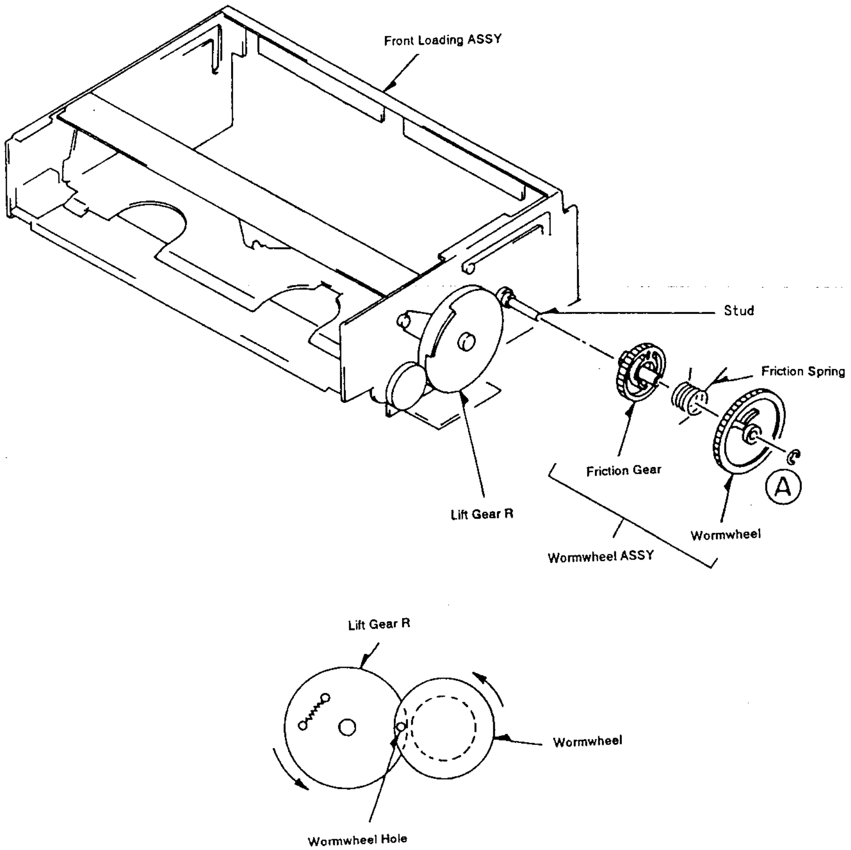


Fig-18

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	S0-4EH-IC1-010		HIC, HB-100
	S0-051-C02-010		IC, AN1431T-TA
	S1-2EI-C02-030		IC, BA17805T
	S0-4EI-C02-040		IC, PQ05RF21
	S0-051-C02-030		IC, AN7805F
	S1-ZE1-C02-010		IC, HA17431P
	80-JU4-701-019		IC, MB87813A
	82-JUF-610-019		IC, MB88202H-1093
	87-002-295-010		IC, LH2464-10
	87-002-528-089		IC, TC7W04F
	87-002-304-080		IC, M51271FP
	87-002-305-089		IC, UPC661G
	87-001-604-089		IC, TC74HCU04F
	87-002-298-089		IC, TC74HC00AF
	87-002-299-089		IC, MB40776 FPT
	87-002-300-089		IC, MB40778 FPT
	87-002-273-089		IC, NJM2246M
	87-001-794-089		IC, TC74HC157F
	87-002-302-080		IC, HD74HC221FP
	87-002-329-089		IC, TC74HC02AF
	87-002-868-080		IC, MC74HC08AF
	87-002-567-089		IC, TC4030BF
	87-020-923-089		IC, PST523D
	87-002-485-089		IC, CXL5003M
	87-001-881-089		IC, TC7SU04F(E6)
	87-002-741-089		IC, CXL5001M
	87-002-870-080		IC, MC74HC74AF
	83-JUS-601-019		IC, MB88515B-1639K
	87-002-394-019		IC, LB1641
	80-JUB-652-010		IC, HD49754NT
	87-001-777-019		IC, BA6219B
	87-001-773-019		IC, LA7323
	87-001-937-019		IC, CXL5003P
	87-001-939-019		IC, CXL5001P
	87-001-990-019		IC, TC4049 BP
	87-001-830-019		IC, NJM2234S
	87-001-901-019		IC, LA7333
	87-002-384-019		IC, NJM2246S
	87-002-449-019		IC, NJM2233BS
	87-001-938-019		IC, LA7311
	87-002-339-019		IC, BA7252S
	87-001-970-019		IC, LA7297
	87-001-980-019		IC, LA7913
	87-001-198-019		IC HD14066BP
	87-001-632-019		IC, BA10393N
	87-001-957-019		IC, LA7210
	87-002-369-010		IC, MM1021
	87-002-378-089		IC, L5631
	87-020-969-019		IC, NJM78M09
	80-JU4-703-019		IC, UPD75212ACW-298
	87-001-966-010		IC, BR93C46
	87-001-790-019		IC, UNIT SBX1610-52
	83-JUS-606-010		IC, HD404302RA39S
TRANSISTOR			
	S0-4EQ-001-010		C-FET, 2SK903
	89-327-125-089		C-TR, 2SC2712GR(LG)
	89-111-625-089		C-TR, 2SA1162GR(SG)
	89-506-210-080		C-FET, 2SK621(30)
	87-026-210-089		C-TR, DTC144EK(26)
	87-026-355-089		C-TR, FMA2(A2)
	87-026-298-089		C-TR, FMW1(W1)
	87-026-211-089		C-TR, DTA144EK(16)
	89-347-296-089		TR, 2SC4729 S
	87-026-218-089		TR, DTC144ES
	89-207-334-089		TR, 2SB733U4
	87-026-452-089		TR, 2SA933S S
	87-026-462-089		TR, 2SC1740S(RS)
	87-026-219-089		TR, DTA144ES
	89-324-122-089		TR, 2SC2412R(BR)
	89-324-123-089		TR, 2SC2412S(BS)
	87-026-463-089		TR, 2SA933S(RS)
	87-026-313-089		TR, DTC343TS TP
	89-322-746-089		TR, 2SC2274F
	87-026-217-089		TR, DTC124ES
DIODE			
	S0-05D-001-010		DIODE, S1WBA60
	S0-4ED-001-030		DIODE, EG01C
	S0-4ED-001-050		DIODE, ZENER RD3. 6ES
	S0-05D-002-010		DIODE, S2LA20
	S0-4ED-002-040		DIODE, ERB83-006
	S0-05D-002-050		DIODE, ZENER HZ24BP-TK
	S1-9A0-D02-070		DIODE, ZENER RD24F-B2
	S1-9A0-D02-070		DIODE, 1SS270
	87-020-465-089		DIODE, 1SS133
	87-020-027-089		C-DIODE, 1SS184(B3)
	87-002-737-080		DIODE, 11EFS2
	87-027-329-089		ZENER, HZ22-3L
	87-027-474-089		ZENER, HZ11A2
	87-027-449-089		ZENER, HZ15-3L
	87-027-416-089		ZENER, HZ3C2
	87-027-584-089		ZENER, HZ9C1L
MAIN C.B			
C401	87-015-677-089		CAP, E 100-6. 3 7L
C402	87-018-205-089		CAP, TC-U 0. 022-25 F
C403	87-010-403-089		CAP, E 3. 3-50 SME
C404	87-018-134-089		CAP, TC-U 0. 01-16 Y
C405	87-010-405-089		CAP, E 10-50 SME
C406	87-010-405-089		CAP, E 10-50 SME
C407	87-010-402-089		CAP, E 2. 2-50 SME
C408	87-018-134-089		CAP, TC-U 0. 01-16 Y
C411	87-018-134-089		CAP, TC-U 0. 01-16 Y
C412	87-018-143-089		CAP, TC-U 4. 7P-50 CH
C413	87-018-126-089		CAP, TC-U 390P-50 B
C415	87-018-149-089		CAP, TC-U 15P-50 CH
C416	87-010-855-089		CAP, E 0. 47-50 BP SME
C417	87-010-855-089		CAP, E 0. 47-50 BP SME
C418	87-010-793-089		CAP, E 0. 47-50 BP SRA
C419	87-018-115-089		CAP, TC-U 47P-50 SL〈DH, KE〉
C419	87-018-109-089		CAP, TC-U 22P-50 SL〈Z, K〉
C420	87-018-119-089		CAP, TC-U 100P-50 B
C421	87-018-119-089		CAP, TC-U 100P-50 B
C422	87-018-104-089		CAP, TC-U 10P-50 SL
C424	87-018-122-089		CAP, TC-U 180P-50 B
C426	87-018-124-089		CAP, TC-U 270P-50 B
C427	87-018-119-089		CAP, TC-U 100P-50 B
C430	87-018-114-089		CAP, TC-U 39P-50 SL
C431	87-018-208-089		CAP, TC-U 0. 047-50 F
C432	87-018-125-089		CAP, TC-U 330P-50 B
C433	87-018-117-089		CAP, TC-U 68P-50 SL
C434	87-018-134-089		CAP, TC-U 0. 01-16 Y
C441	87-010-374-089		CAP, E 47-10
C442	87-010-374-089		CAP, E 47-10
C443	87-018-134-089		CAP, TC-U 0. 01-16 Y
C444	87-018-134-089		CAP, TC-U 0. 01-16 Y
C445	87-018-110-089		CAP, TC-U 24P-50 SL
C446	87-018-118-089		CAP, TC-U 82P-50 B
C447	87-018-110-089		CAP, TC-U 24P-50 SL
C448	87-018-134-089		CAP, TC-U 0. 01-16 Y
C449	87-018-209-089		CAP, TC-U 0. 1-50 F
C450	87-018-134-089		CAP, TC-U 0. 01-16 Y
C451	87-018-209-089		CAP, TC-U 0. 1-50 F

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C452	87-018-134-089		CAP, TC-U 0. 01-16 Y〈K, DH, KE〉
C453	87-018-205-089		CAP, TC-U 0. 022-25 F
C454	87-018-109-089		CAP, TC-U 22P-50 SL
C455	87-018-117-089		CAP, TC-U 68P-50 SL
C456	87-018-109-089		CAP, TC-U 22P-50 SL
C457	87-018-134-089		CAP, TC-U 0. 01-16 Y
C458	87-018-209-089		CAP, TC-U 0. 1-50 F
C459	87-018-134-089		CAP, TC-U 0. 01-16 Y
C460	87-018-209-089		CAP, TC-U 0. 1-50 F
C461	87-018-134-089		CAP, TC-U 0. 01-16 Y〈K, DH, KE〉
C462	87-018-205-089		CAP, TC-U 0. 022-25 F
C463	87-010-382-089		CAP, E 22-25 SME
C465	87-018-205-089		CAP, TC-U 0. 022-25 F
C466	87-018-205-089		CAP, TC-U 0. 022-25 F
C467	87-018-205-089		CAP, TC-U 0. 022-25 F
C468	87-018-205-089		CAP, TC-U 0. 022-25 F
C469	87-010-263-089		CAP, E 100-10
C470	87-018-134-089		CAP, TC-U 0. 01-16 Y
C473	87-010-384-089		CAP, E 100-25 SME
C474	87-018-107-089		CAP, TC-U 18P-50 SL
C475	87-018-134-089		CAP, TC-U 0. 01-16 Y
C476	87-018-115-089		CAP, TC-U 47P-50 SL
C477	87-018-134-089		CAP, TC-U 0. 01-16 Y
C478	87-018-121-089		CAP, TC-U 150P-50 B
C480	87-018-121-089		CAP, TC-U 150P-50 B
C481	87-018-125-089		CAP, TC-U 330P-50 B
C482	87-018-107-089		CAP, TC-U 18P-50 SL
C483	87-018-115-089		CAP, TC-U 47P-50 SL
C484	87-018-113-089		CAP, TC-U 33P-50 SL
C485	87-010-405-089		CAP, E 10-50 SME〈DH, KE〉
C485	87-010-265-089		CAP, E 33-16 SME〈Z, K〉
C486	87-010-384-089		CAP, E 100-25 SME
C487	87-018-205-089		CAP, TC-U 0. 022-25 F
C488	87-010-263-089		CAP, E 100-10
C489	87-010-371-089		CAP, E 470-6. 3
C490	87-010-374-089		CAP, E 47-10
C492	87-018-134-089		CAP, TC-U 0. 01-16 Y〈DH, KE〉
C493	87-010-374-089		CAP, E 47-10
C494	87-010-263-089		CAP, E 100-10
C495	87-018-134-089		CAP, TC-U 0. 01-16 Y
C496	87-018-115-089		CAP, TC-U 47P-50 SL
C497	87-010-374-089		CAP, E 47-10
C498	87-010-405-089		CAP, E 10-50 SME
C499	87-010-374-089		CAP, E 47-10
C500	87-018-134-089		CAP, TC-U 0. 01-16 Y〈K, DH, KE〉
C500	87-018-209-089		CAP, TC-U 0. 1-50 F〈Z〉
C501	87-010-374-089		CAP, E 47-10
C502	87-018-205-089		CAP, TC-U 0. 022-25 F
C503	87-018-134-089		CAP, TC-U 0. 01-16 Y
C504	87-018-208-089		CAP, TC-U 0. 047-50 F
C505	87-018-134-089		CAP, TC-U 0. 01-16 Y
C506	87-010-401-089		CAP, E 1-50 SME
C507	87-018-115-089		CAP, TC-U 47P-50 SL
C508	87-010-401-089		CAP, E 1-50 SME
C509	87-010-401-089		CAP, E 1-50 SME
C510	87-018-205-089		CAP, TC-U 0. 022-25 F
C511	87-018-209-089		CAP, TC-U 0. 1-50 F
C512	87-018-134-089		CAP, TC-U 0. 01-16 Y
C513	87-018-119-089		CAP, TC-U 100P-50 B
C514	87-018-134-089		CAP, TC-U 0. 01-16 Y
C518	87-018-208-089		CAP, TC-U 0. 047-50 F
C519	87-010-401-089		CAP, E 1-50 SME
C520	87-018-134-089		CAP, TC-U 0. 01-16 Y
C521	87-018-134-089		CAP, TC-U 0. 01-16 Y
C522	87-018-134-089		CAP, TC-U 0. 01-16 Y
C523	87-018-134-089		CAP, TC-U 0. 01-16 Y
C524	87-018-134-089		CAP, TC-U 0. 01-16 Y
C525	87-018-134-089		CAP, TC-U 0. 01-16 Y
C526	87-018-134-089		CAP, TC-U 0. 01-16 Y
C527	87-010-263-089		CAP, E 100-10

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C532	87-018-134-089		CAP, TC-U 0. 01-16 Y
C534	87-018-134-089		CAP, TC-U 0. 01-16 Y
C535	87-018-134-089		CAP, TC-U 0. 01-16 Y
C537	87-018-205-089		CAP, TC-U 0. 022-25 F
C551	87-018-134-089		CAP, TC-U 0. 01-16 Y
C552	87-018-134-089		CAP, TC-U 0. 01-16 Y
C553	87-018-134-089		CAP, TC-U 0. 01-16 Y
C554	87-018-134-089		CAP, TC-U 0. 01-16 Y
C555	87-018-134-089		CAP, TC-U 0. 01-16 Y
C556	87-018-208-089		CAP, TC-U 0. 047-50 F
C557	87-018-134-089		CAP, TC-U 0. 01-16 Y
C558	87-018-134-089		CAP, TC-U 0. 01-16 Y
C559	87-018-134-089		CAP, TC-U 0. 01-16 Y
C560	87-018-134-089		CAP, TC-U 0. 01-16 Y
C561	87-018-134-089		CAP, TC-U 0. 01-16 Y
C562	87-018-134-089		CAP, TC-U 0. 01-16 Y
C563	87-018-208-089		CAP, TC-U 0. 047-50 F
C564	87-018-134-089		CAP, TC-U 0. 01-16 Y
C565	87-018-134-089		CAP, TC-U 0. 01-16 Y
C566	87-018-134-089		CAP, TC-U 0. 01-16 Y
C567	87-018-134-089		CAP, TC-U 0. 01-16 Y
C568	87-018-209-089		CAP, TC-U 0. 1-50 F
C570	87-018-134-089		CAP, TC-U 0. 01-16 Y
C575	87-018-209-089		CAP, TC-U 0. 1-50 F〈Z〉
C581	87-015-677-089		CAP, E 100-6. 3 7L
C582	87-018-134-089		CAP, TC-U 0. 01-16 Y〈Z〉
C583	87-015-677-089		CAP, E 100-6. 3 7L
C585	87-015-677-089		CAP, E 100-6. 3 7L
C587	87-018-111-089		CAP, TC-U 27P-50 SL
C588	87-018-113-089		CAP, TC-U 33P-50 SL
C589	87-018-111-089		CAP, TC-U 27P-50 SL
C591	87-015-681-089		CAP, E 10-16 7L
C592	87-015-681-089		CAP, E 10-16 7L
C593	87-018-134-089		CAP, TC-U 0. 01-16 Y
C594	87-018-134-089		CAP, TC-U 0. 01-16 Y
C601	87-010-405-089		CAP, E 10-50 SME
C602	87-018-134-089		CAP, TC-U 0. 01-16 Y
C603	87-010-403-089		CAP, E 3. 3-50 SME
C604	87-010-403-089		CAP, E 3. 3-50 SME
C605	87-010-263-089		CAP, E 100-10
C606	87-010-405-089		CAP, E 10-50 SME
C607	87-018-134-089		CAP, TC-U 0. 01-16 Y
C608	87-018-134-089		CAP, TC-U 0. 01-16 Y
C781	87-010-401-089		CAP, E 1-50 SME
C782	87-010-405-089		CAP, E 10-50 SME
C785	87-010-384-089		CAP, E 100-25 SME
C786	87-018-134-089		CAP, TC-U 0. 01-16 Y
C789	87-010-405-089		CAP, E 10-50 SME
C790	87-010-405-089		CAP, E 10-50 SME
C792	87-018-203-089		CAP, TC-U 8200P-16 Y
C802	87-010-260-089		CAP, E 47-25 SME
C804	87-018-134-089		CAP, TC-U 0. 01-16 Y〈DH, KE〉
C804	87-018-209-089		CAP, TC-U 0. 1-50 F〈Z, K〉
C805	87-018-134-089		CAP, TC-U 0. 01-16 Y
C806	87-010-263-089		CAP, E 100-10
C807	87-010-263-089		CAP, E 100-10
C808	87-010-374-089		CAP, E 47-10
C809	87-010-408-089		CAP, E 47-50 SME
C810	87-010-404-089		CAP, E 4. 7-50 SME
C811	87-010-404-089		CAP, E 4. 7-50 SME
C812	87-010-401-089		CAP, E 1-50 SME〈Z, K, KE〉
C812	87-010-402-089		CAP, E 2. 2-50 SME〈DH〉
C813	87-010-404-089		CAP, E 4. 7-50 SME
C814	87-010-401-089		CAP, E 1-50 SME
C817	87-010-401-089		CAP, E 1-50 SME
C823	87-018-134-089		CAP, TC-U 0. 01-16 Y
C824	87-018-134-089		CAP, TC-U 0. 01-16 Y〈DH, KE〉
C824	87-018-205-089		CAP, TC-U 0. 022-25 F〈Z, K〉
C825	87-018-134-089		CAP, TC-U 0. 01-16 Y
C826	87-018-134-089		CAP, TC-U 0. 01-16 Y

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C828	87-010-374-089		CAP, E 47-10
C829	87-010-405-089		CAP, E 10-50 SME
C832	87-018-131-089		CAP, TC-U 1000P-50 B
C833	87-018-125-089		CAP, TC-U 330P-50 B
C834	87-010-400-089		CAP, E 0. 47-50 SME
C835	87-010-401-089		CAP, E 1-50 SME
C836	87-018-122-089		CAP, TC-U 180P-50 B
C837	87-010-544-089		CAP, E 0. 1-50〈Z〉
C837	87-010-400-089		CAP, E 0. 47-50 SME〈K, DH, KE〉
C839	87-018-134-089		CAP, TC-U 0. 01-16 Y
C840	87-018-134-089		CAP, TC-U 0. 01-16 Y
C841	87-018-134-089		CAP, TC-U 0. 01-16 Y
C843	87-018-134-089		CAP, TC-U 0. 01-16 Y
C844	87-018-134-089		CAP, TC-U 0. 01-16 Y
C845	87-018-134-089		CAP, TC-U 0. 01-16 Y
C848	87-018-205-089		CAP, TC-U 0. 022-25 F
C849	87-018-134-089		CAP, TC-U 0. 01-16 Y〈Z, K〉
C849	87-018-205-089		CAP, TC-U 0. 022-25 F〈DH, KE〉
C850	87-010-405-089		CAP, E 10-50 SME〈Z, K〉
C852	87-018-134-089		CAP, TC-U 0. 01-16 Y
C853	87-018-134-089		CAP, TC-U 0. 01-16 Y
C854	87-010-374-089		CAP, E 47-10
C861	87-018-209-089		CAP, TC-U 0. 1-50 F〈Z〉
C862	87-018-209-089		CAP, TC-U 0. 1-50 F〈Z〉
C863	87-018-209-089		CAP, TC-U 0. 1-50 F〈Z〉
CF801	87-030-228-019		VIB, CER CSB500E5
DL501	80-JUB-675-019		DL, ADL-FN1344W
DL502	80-JUB-676-019		DL, ADL-FE2544W
DL503	80-JUB-674-019		DL, ADL-FN1334W
FL401	89-JU8-618-019		FLTR, MXV-7XF 3M
FL501	87-030-240-019		FLTR, 4. 21MHZ BPF〈Z, K〉
FL501	82-JUF-621-019		FLTR, SBP-4820 4. 21M〈DH, KE〉
FL502	82-JUF-622-019		FLTR, SBP-4821 5. 06M
FL503	80-JU1-743-019		FLTR, LPF 1. 1M SG
FL504	80-JUB-681-019		FLTR, BPF 3. 58M SG
FL505	80-JUB-682-019		FLTR, BPF 4. 43M SG
J401	89-JU7-646-019		JACK, PIN 2-2〈DH, KE〉
J402	89-JU7-646-019		JACK, PIN 2-2〈DH, KE〉
L401	87-005-436-089		COIL, 22UH FLR50
L402	87-003-102-089		COIL, 10UH
L403	87-003-285-089		COIL, 39UH LAL02
L431	87-003-288-089		COIL, 180UH LAL02
L432	87-003-151-089		COIL, 82UH LAL02
L441	87-003-147-089		COIL, 22UH
L442	87-005-436-089		COIL, 22UH FLR50
L443	87-003-150-089		COIL 68UH
L444	87-003-150-089		COIL 68UH
L445	87-003-150-089		COIL 68UH
L446	87-003-150-089		COIL 68UH
L465	87-006-189-089		COIL, 220UH EL0909
L475	87-003-288-089		COIL, 180UH LAL02〈Z, K〉
L475	87-003-151-089		COIL, 82UH LAL02〈DH, KE〉
L476	87-003-282-089		COIL, 12UH
L478	87-003-403-089		COIL, 5. 6UH LAL02
L479	87-003-288-089		COIL, 180UH LAL02
L480	87-003-282-089		COIL, 12UH
L486	87-005-444-089		COIL, 100UH FLR50
L487	87-005-436-089		COIL, 22UH FLR50
L488	87-005-444-089		COIL, 100UH FLR50〈Z〉
L488	87-003-147-089		COIL, 22UH〈DH, KE〉
L488	87-005-436-089		COIL, 22UH FLR50〈K〉
L489	87-005-444-089		COIL, 100UH FLR50
L501	87-005-436-089		COIL, 22UH FLR50
L503	87-003-283-089		COIL, 18UH LAL02
L551	87-003-146-089		COIL, 15UH LAL02
L552	87-003-146-089		COIL, 15UH LAL02
L555	87-003-146-089		COIL, 15UH LAL02
L560	87-003-284-089		COIL, 27UH LAL02
L562	87-003-284-089		COIL, 27UH LAL02
L563	87-003-284-089		COIL, 27UH LAL02

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
L564	87-005-754-089		COIL, 22UH LHLC06〈Z〉
L601	87-003-147-089		COIL, 22UH
L611	87-003-102-089		COIL, 10UH〈Z〉
L781	87-005-444-089		COIL, 100UH FLR50
L801	87-005-444-089		COIL, 100UH FLR50
L802	87-005-444-089		COIL, 100UH FLR50
L803	87-005-444-089		COIL, 100UH FLR50
L805	87-005-444-089		COIL, 100UH FLR50
L808	87-005-444-089		COIL, 100UH FLR50
PIF801	80-JU4-646-010		PIF PAC F4E0-721P1〈K〉
PIF801	82-JUT-630-010		PIF, PAC F4E0-722P1〈Z〉
RF386	80-JU4-647-019		MOD, RF MDLK 6E 814A〈Z, K〉
RF386	89-JU5-672-010		RF MOD, E7553TG〈KE〉
RF386	89-JU5-693-019		RF MOD, E773A〈DH〉
SFR401	87-024-541-089		SFK, 3. 3K DLA6 H
SFR402	87-024-542-089		SFR, 4. 7K DIA6 H
SFR403	87-024-543-089		SFR, 10K DIA6 H
SFR404	87-024-541-089		SFK, 3. 3K DLA6 H
SFR405	87-024-539-089		SFR, 1K DIA6 H
SFR406	87-024-540-089		SFR, 2. 2K DIA6 H
SFR407	87-024-540-089		SFR, 2. 2K DIA6 H
SFR531	87-024-539-089		SFR, 1K DIA6 H
SW801	87-036-185-019		SW, SL2-2-3SSU1〈Z, K〉
TU801	80-JU2-611-119		TV TU, 33-RC01〈KE〉
TU801	89-JU5-653-019		TV TU, F4EH-721〈DH〉
VIF801	80-JU4-644-019		VIF PAC, 02M-03〈KE〉
VIF801	80-JU4-645-019		VIF PAC, 12M-02〈DH〉
X501	80-JUB-678-089		VIB, XTAL 3. 58 MH
X502	89-JU7-641-089		VIB, XTAL 4. 43M

SERVO/SYS. CON C. B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
BZ201	87-030-210-019		VIB, BZ PKM17EPT
C101	87-010-387-089		CAP, ELECT 470-25V
C102	87-018-132-089		CAP, TC-U 2200P-16 X
C104	87-010-221-089		CAP, E 470-10
C105	87-010-408-089		CAP, E 47-50 SME
C106	87-010-879-089		CAP, E 470-35 SMG
C107	87-010-384-089		CAP, E 100-25 SME
C108	87-010-263-089		CAP, E 100-10
C109	87-010-263-089		CAP, E 100-10
C110	87-010-384-089		CAP, E 100-25 SME
C111	87-010-221-089		CAP, E 470-10
C112	87-018-209-089		CAP, TC-U 0. 1-50 F
C201	87-010-263-089		CAP, E 100-10
C202	87-018-209-089		CAP, TC-U 0. 1-50 F
C203	87-018-208-089		CAP, TC-U 0. 047-50 F
C204	87-018-134-089		CAP, TC-U 0. 01-16 Y
C205	87-018-209-089		CAP, TC-U 0. 1-50 F
C221	87-018-209-089		CAP, TC-U 0. 1-50 F
C223	87-010-384-089		CAP, E 100-25 SME
C301	87-010-263-089		CAP, E 100-10
C302	87-010-401-089		CAP, E 1-50 SME
C303	87-010-401-089		CAP, E 1-50 SME
C304	87-018-134-089		CAP, TC-U 0. 01-16 Y
C305	87-010-401-089		CAP, E 1-50 SME
C306	87-010-401-089		CAP, E 1-50 SME
C307	87-018-134-089		CAP, TC-U 0. 01-16 Y
C308	87-010-401-089		CAP, E 1-50 SME
C309	87-010-401-089		CAP, E 1-50 SME
C310	87-018-134-089		CAP, TC-U 0. 01-16 Y
C321	87-010-263-089		CAP, E 100-10
C322	87-018-209-089		CAP, TC-U 0. 1-50 F
C324	87-018-134-089		CAP, TC-U 0. 01-16 Y
C326	87-018-109-089		CAP, TC-U 22P-50 SL
C327	87-018-107-089		CAP, TC-U 18P-50 SL
C328	87-018-134-089		CAP, TC-U 0. 01-16 Y
C330	87-018-209-089		CAP, TC-U 0. 1-50 F
C331	87-010-263-089		CAP, E 100-10
C341	87-010-405-089		CAP, E 10-50 SME

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C342	87-010-405-089		CAP, E 10-50 SME
C343	87-018-209-089		CAP, TC-U 0.1-50 F
C344	87-010-405-089		CAP, E 10-50 SME
C361	87-010-405-089		CAP, E 10-50 SME
C362	87-010-402-089		CAP, E 2.2-50 SME
C363	87-018-134-089		CAP, TC-U 0.01-16 Y
C364	87-010-709-089		CAP, E 0.22-50 BP
C365	87-018-209-089		CAP, TC-U 0.1-50 F
C366	87-010-384-089		CAP, E 100-25 SME
C367	87-018-209-089		CAP, TC-U 0.1-50 F
C368	87-018-209-089		CAP, TC-U 0.1-50 F
C371	87-018-209-089		CAP, TC-U 0.1-50 F
C381	87-018-131-089		CAP, TC-U 1000P-50 B
C382	87-010-382-089		CAP, E 22-25 SME
C383	87-010-265-089		CAP, E 33-16 SME
C384	87-018-123-089		CAP, TC-U 220P-50 B
C385	87-010-404-089		CAP, E 4.7-50 SME
C386	87-018-119-089		CAP, TC-U 100P-50 B
CL201	87-030-214-089		VIB, CER KBR6.0MKS
FB405	87-003-316-089		F-BEAD FBA03HA450〈Z〉
L101	87-005-444-089		COIL, 100UH FLR50
L201	87-005-440-089		COIL, 47UH FLR50
L301	87-005-440-089		COIL, 47UH FLR50
L302	87-003-149-089		COIL, 47UH
L310	87-006-189-089		COIL, 220UH EL0909
L311	87-006-189-089		COIL, 220UH EL0909
!R106	87-029-124-069		RES, FUSE 2.2-1/4W
R281	87-029-142-019		RES, FUSE 3.3-1/2W J
R376	87-029-142-019		RES, FUSE 3.3-1/2W J
RA201	84-487-615-019		ARRAY, R 12X103 LE
RA202	84-487-615-019		ARRAY, R 12X103 LE
RA203	80-JUB-657-019		ARRAY, R 10X103 LE
RA204	80-JUB-656-019		ARRAY, R 5X103 LE
SFR301	87-024-277-089		SFR, 220K DIA6 V TP
SFR302	87-024-276-089		SFR, 100K DIA6 V TP
T101	80-JU4-657-019		PT, CONVERTER
X301	80-JUB-655-089		VIB, XTAL 13.3M
X302	80-JUB-654-089		VIB, XTAL 10.7M

HEAD AMP/AUDIO C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C652	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, K〉
C653	87-010-060-089		CAP, E 100-16 7L
C654	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C654	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C654	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C655	87-018-117-089		CAP, TC-U 68P-50 SL
C656	87-018-113-089		CAP, TC-U 33P-50 SL
C657	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, DH, KE〉
C657	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C658	87-018-208-089		CAP, TC-U 0.047-50 F
C660	87-015-695-089		CAP, E 1-50 7L
C661	87-018-208-089		CAP, TC-U 0.047-50 F
C662	87-018-199-089		CAP, TC-U 3300P-16 X
C671	87-015-676-089		CAP, E 47-6.3 7L
C672	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C672	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C672	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C673	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C673	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C673	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C674	87-015-677-089		CAP, E 100-6.3 7L
C675	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C675	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, K〉
C677	87-018-114-089		CAP, TC-U 39P-50 SL
C678	87-018-117-089		CAP, TC-U 68P-50 SL
C680	87-018-109-089		CAP, TC-U 22P-50 SL
C681	87-018-100-089		CAP, TC-U 4.7P-50 SL
C682	87-015-695-089		CAP, E 1-50 7L
C683	87-018-209-089		CAP, TC-U 0.1-50 F

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C684	87-018-114-089		CAP, TC-U 39P-50 SL
C685	87-018-209-089		CAP, TC-U 0.1-50 F
C686	87-018-114-089		CAP, TC-U 39P-50 SL
C687	87-015-695-089		CAP, E 1-50 7L
C689	87-015-680-089		CAP, E 47-10 7L〈Z, K〉
C689	87-015-676-089		CAP, E 47-6.3 7L〈DH, KE〉
C701	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C701	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C702	87-010-384-089		CAP, E 100-25 SME
C703	87-015-682-089		CAP, E 22-16 7L〈Z, K〉
C703	87-015-681-089		CAP, E 10-16 7L〈DH, KE〉
C704	87-010-260-089		CAP, E 47-25 SME
C711	87-010-404-089		CAP, E 4.7-50 SME
C714	87-010-402-089		CAP, E 2.2-50 SME
C721	87-018-127-089		CAP, TC-U 470P-50 B
C722	87-010-382-089		CAP, E 22-25 SME
C731	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C731	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C732	87-018-195-089		CAP, TC-U 1200P-16 X
C733	87-018-197-089		CAP, TC-U 1800P-16 X
C734	87-010-401-089		CAP, E 1-50 SME
C735	87-010-265-089		CAP, E 33-16 SME
C737	87-010-401-089		CAP, E 1-50 SME
C739	87-018-205-089		CAP, TC-U 0.022-25 F
C740	87-018-209-089		CAP, TC-U 0.1-50 F
C741	87-018-123-089		CAP, TC-U 220P-50 B
C743	87-018-131-089		CAP, TC-U 1000P-50 B
C744	87-018-134-089		CAP, TC-U 0.01-16 Y
C745	87-010-260-089		CAP, E 47-25 SME
C746	87-010-401-089		CAP, E 1-50 SME
L652	87-005-444-089		COIL, 100UH FLR50
L653	87-003-403-089		COIL, 5.6UH LAL02
L671	87-003-152-089		COIL, 100UH
L672	87-003-284-089		COIL, 27UH LAL02
L673	87-003-148-089		COIL, 33UH
L701	87-005-239-089		COIL, 100UH
L710	87-005-398-089		COIL, 8.2MH LHL06
T741	82-JUF-616-019		COIL, OSC BIAS-70K

DIGITAL C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C1	87-010-779-089		C-CAP, E 100-6.3
C2	87-010-779-089		C-CAP, E 100-6.3
C3	87-010-197-089		C-CAP, S 0.01-25 B
C4	87-010-665-089		C-CAP, E 47-6.3
C5	87-010-452-089		C-CAP, 1-16 F
C6	87-010-661-089		C-CAP, E 10-16
C7	87-010-175-089		C-CAP, S 560P-50 SL
C10	87-010-779-089		C-CAP, E 100-6.3
C11	87-010-197-089		C-CAP, S 0.01-25 B
C12	87-010-197-089		C-CAP, S 0.01-25 B
C13	87-010-197-089		C-CAP, S 0.01-25 B
C14	87-012-349-089		C-CAP, S 1000P-50 CH
C15	87-010-197-089		C-CAP, S 0.01-25 B
C17	87-010-197-089		C-CAP, S 0.01-25 B
C18	87-010-452-089		C-CAP, 1-16 F
C19	87-010-665-089		C-CAP, E 47-6.3
C20	87-010-197-089		C-CAP, S 0.01-25 B
C21	87-010-424-089		C-CAP, TN 4.7-4〈K, DH, KE〉
C21	87-010-452-089		C-CAP, 1-16 F〈Z〉
C22	87-010-197-089		C-CAP, S 0.01-25 B
C23	87-010-197-089		C-CAP, S 0.01-25 B
C24	87-010-178-089		C-CAP, S 1000P-50 B
C25	87-010-178-089		C-CAP, S 1000P-50 B
C26	87-010-197-089		C-CAP, S 0.01-25 B
C27	87-010-318-089		C-CAP, S 47P-50 CH
C28	87-010-154-089		C-CAP, S 10P-50 CH
C29	87-010-154-089		C-CAP, S 10P-50 CH
C30	87-010-197-089		C-CAP, S 0.01-25 B
C32	87-010-194-089		C-CAP, S 0.047-25 F

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C33	87-010-194-089		C-CAP, S 0.047-25 F
C34	87-010-450-089		C-CAP, 0.47-16 F
C35	87-010-452-089		C-CAP, 1-16 F
C36	87-010-452-089		C-CAP, 1-16 F
C38	87-010-176-089		C-CAP, S 680P-50 SL
C39	87-010-661-089		C-CAP, E 10-16
C41	87-010-176-089		C-CAP, S 680P-50 SL
C42	87-010-661-089		C-CAP, E 10-16
C45	87-010-452-089		C-CAP, 1-16 F
C46	87-010-452-089		C-CAP, 1-16 F
C47	87-010-452-089		C-CAP, 1-16 F
C49	87-010-452-089		C-CAP, 1-16 F
C50	87-010-197-089		C-CAP, S 0.01-25 B
C51	87-010-665-089		C-CAP, E 47-6.3
C53	87-012-155-089		C-CAP, S 180P-50 CH
C54	87-010-315-089		C-CAP, S 27P-50 CH
C55	87-010-779-089		C-CAP, E 100-6.3
C56	87-010-779-089		C-CAP, E 100-6.3
C57	87-010-197-089		C-CAP, S 0.01-25 B
C58	87-010-197-089		C-CAP, S 0.01-25 B
C60	87-010-197-089		C-CAP, S 0.01-25 B
C61	87-010-665-089		C-CAP, E 47-6.3
C62	87-010-197-089		C-CAP, S 0.01-25 B
C63	87-010-196-089		C-CAP, S 0.1-25 F
C64	87-010-312-089		C-CAP, S 15P-50 CH
C65	87-010-178-089		C-CAP, S 1000P-50 B
C66	87-010-312-089		C-CAP, S 15P-50 CH〈Z〉
C66	87-010-314-089		C-CAP, S 22P-50 CH〈K, DH, KE〉
C67	87-010-197-089		C-CAP, S 0.01-25 B
C68	87-010-661-089		C-CAP, E 10-16
C69	87-010-661-089		C-CAP, E 10-16
C70	87-010-665-089		C-CAP, E 47-6.3
C71	87-010-197-089		C-CAP, S 0.01-25 B
C72	87-010-665-089		C-CAP, E 47-6.3
C73	87-010-197-089		C-CAP, S 0.01-25 B
C74	87-010-661-089		C-CAP, E 10-16
C76	87-010-315-089		C-CAP, S 27P-50 CH〈K, DH, KE〉
C76	87-010-316-089		C-CAP, S 33P-50 CH〈Z〉
C77	87-010-314-089		C-CAP, S 22P-50 CH〈Z〉
C77	87-010-315-089		C-CAP, S 27P-50 CH〈K, DH, KE〉
C79	87-010-315-089		C-CAP, S 27P-50 CH
C80	87-010-313-089		C-CAP, S 18P-50 CH〈Z〉
C80	87-010-314-089		C-CAP, S 22P-50 CH〈K, DH, KE〉
C83	87-012-157-089		C-CAP, S 330P-50 CH
C85	87-010-779-089		C-CAP, E 100-6.3
C86	87-010-197-089		C-CAP, S 0.01-25 B
C87	87-010-197-089		C-CAP, S 0.01-25 B
C88	87-010-197-089		C-CAP, S 0.01-25 B
C89	87-010-197-089		C-CAP, S 0.01-25 B
C90	87-010-197-089		C-CAP, S 0.01-25 B
C92	87-010-197-089		C-CAP, S 0.01-25 B
C93	87-010-661-089		C-CAP, E 10-16
C94	87-010-197-089		C-CAP, S 0.01-25 B
C95	87-010-197-089		C-CAP, S 0.01-25 B
C96	87-010-665-089		C-CAP, E 47-6.3
C97	87-010-665-089		C-CAP, E 47-6.3
C98	87-010-661-089		C-CAP, E 10-16
C99	87-010-661-089		C-CAP, E 10-16
C100	87-010-779-089		C-CAP, E 100-6.3
C101	87-010-197-089		C-CAP, S 0.01-25 B
C102	87-010-176-089		C-CAP, S 680P-50 SL
C103	87-010-197-089		C-CAP, S 0.01-25 B
C105	87-010-955-089		C-CAP, 0.33-16 R
C106	87-010-956-089		C-CAP, S 0.068-25 B
C107	87-010-452-089		C-CAP, 1-16 F
C108	87-010-197-089		C-CAP, S 0.01-25 B
C109	87-010-197-089		C-CAP, S 0.01-25 B
C110	87-010-178-089		C-CAP, S 1000P-50 B
C115	87-010-197-089		C-CAP, S 0.01-25 B
C116	87-010-175-089		C-CAP, S 560P-50 SL

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C117	87-012-142-089		C-CAP, S 0.33-16 F
C122	87-010-746-089		C-CAP, TN 10-4
C123	87-010-452-089		C-CAP, 1-16 F
C124	87-010-196-089		C-CAP, S 0.1-25 F
C125	87-010-197-089		C-CAP, S 0.01-25 B
C126	87-010-196-089		C-CAP, S 0.1-25 F
C127	87-010-318-089		C-CAP, S 47P-50 CH
C128	87-010-746-089		C-CAP, TN 10-4
C129	87-010-197-089		C-CAP, S 0.01-25 B
C132	87-010-746-089		C-CAP, TN 10-4
C133	87-010-452-089		C-CAP, 1-16 F
C134	87-010-196-089		C-CAP, S 0.1-25 F
C135	87-010-197-089		C-CAP, S 0.01-25 B
C136	87-010-196-089		C-CAP, S 0.1-25 F
C137	87-010-318-089		C-CAP, S 47P-50 CH
C138	87-010-746-089		C-CAP, TN 10-4
C139	87-010-197-089		C-CAP, S 0.01-25 B
C140	87-010-452-089		C-CAP, 1-16 F
C141	87-010-452-089		C-CAP, 1-16 F
C142	87-010-452-089		C-CAP, 1-16 F
C150	87-010-315-089		C-CAP, S 27P-50 CH
C151	87-010-148-089		C-CAP, S 4P-50 CH
C152	87-010-312-089		C-CAP, S 15P-50 CH
C200	87-010-318-089		C-CAP, S 47P-50 CH
C201	87-010-746-089		C-CAP, TN 10-4
C202	87-010-196-089		C-CAP, S 0.1-25 F
C203	87-010-197-089		C-CAP, S 0.01-25 B
C204	87-010-196-089		C-CAP, S 0.1-25 F
C205	87-010-197-089		C-CAP, S 0.01-25 B
C206	87-010-196-089		C-CAP, S 0.1-25 F
C207	87-010-746-089		C-CAP, TN 10-4
C208	87-010-746-089		C-CAP, TN 10-4
C209	87-010-452-089		C-CAP, 1-16 F
C211	87-010-197-089		C-CAP, S 0.01-25 B
C212	87-010-197-089		C-CAP, S 0.01-25 B
C291	87-010-196-089		C-CAP, S 0.1-25 F
C293	87-010-319-089		C-CAP, S 56P-50 CH
C295	87-015-819-089		CHIP CAP 0.01
C296	87-010-314-089		C-CAP, S 22P-50 CH〈Z〉
C296	87-010-319-089		C-CAP, S 56P-50 CH〈K, DH, KE〉
C301	87-010-197-089		C-CAP, S 0.01-25 B
C302	87-018-209-089		CAP, TC-U 0.1-50 F〈K, DH, KE〉
D1	87-002-345-089		C-VARI-CAP, 1T363-01-T8B
FL1	80-JU4-683-019		FLTR, MZV-29V 6MLPF
FL2	83-JUS-611-019		FLTR, MZV-35L TWINBPF
FL3	80-JU4-682-019		FLTR, MYV-251 3MLP
FL4	80-JU4-684-019		FLTR MXV-7WW 2.5MLPF
FL10	80-JU4-218-089		FLTR, EMI STB102KB
FL11	87-003-319-089		FLTR, EMI LC680K-R27〈Z〉
FL11	87-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL12	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL12	80-JU4-218-089		FILTER, EMI STB102KB〈K, DH, KE〉
FL13	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL13	80-JU4-218-089		FILTER, EMI STB102KB〈K, DH, KE〉
FL14	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL14	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL15	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL15	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL16	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL16	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL17	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL17	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL18	87-003-319-089		FLTR, EMI LC680K-R27〈Z〉
FL18	87-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL19	87-003-319-089		FLTR, EMI LC680K-R27〈Z〉
FL19	87-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL20	80-JU4-218-089		FLTR, EMI STB102KB
L1	87-005-573-089		C-COIL, 47UH K FLC32
L2	87-005-573-089		C-COIL, 47UH K FLC32
L3	87-005-265-089		C-COIL, 33UH ML3216

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
L4	87-003-297-089		C-COIL, 180UH MLF3225
L5	87-003-297-089		C-COIL, 180UH MLF3225
L6	87-005-573-089		C-COIL, 47UH K FLC32
L7	87-005-573-089		C-COIL, 47UH K FLC32
L8	87-005-266-089		C-COIL, 47UH ML3216
L9	87-005-750-089		C-COIL, 3. 3UH LEM3225
L10	87-005-573-089		C-COIL, 47UH K FLC32
L11	87-005-573-089		C-COIL, 47UH K FLC32
L12	87-005-266-089		C-COIL, 47UH ML3216
L13	87-005-573-089		C-COIL, 47UH K FLC32
L15	87-005-573-089		C-COIL, 47UH K FLC32
L16	87-005-263-089		C-COIL, 15UH ML3216
L17	87-005-263-089		C-COIL, 15UH ML3216
L18	87-005-263-089		C-COIL, 15UH ML3216
L20	87-005-573-089		C-COIL, 47UH K FLC32
SFR1	87-024-334-089		C-SFR, 3. 3K RH03AAA
SFR2	87-024-131-089		C-SFR, 47K
SFR3	87-024-131-089		C-SFR, 47K
SFR4	87-024-131-089		C-SFR, 47K
SFR5	87-024-062-089		C-SFR, 1K
SFR6	87-024-062-089		C-SFR, 1K
SFR9	87-024-418-089		C-SFR, 680K RH03A3A
SFR10	87-024-418-089		C-SFR, 680K RH03A3A
TC1	87-011-221-089		TRIMER, 30P VCT51
TC2	87-011-219-089		CAP TRIMMER 10P VCT
TC5	87-011-221-089		TRIMER, 30P VCT51
X1	80-JU1-676-089		VIB, XTAL 14. 31MHZ
X2	80-JU1-661-089		VIB, XTAL 17. 73MHZ
X3	80-JU1-676-089		VIB, XTAL 14. 31MHZ
X4	80-JU1-661-089		VIB, XTAL 17. 73MHZ
X5	80-JUB-655-089		VIB XTAL 13. 3M

AUTO TRACKING C. B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C951	87-018-134-089		CAP, TC-U 0. 01-16 Y
C952	87-018-121-089		CAP, TC-U 150P-50 B
C953	87-018-134-089		CAP, TC-U 0. 01-16 Y
C956	87-018-134-089		CAP, TC-U 0. 01-16 Y
C957	87-018-134-089		CAP, TC-U 0. 01-16 Y
C958	87-018-134-089		CAP, TC-U 0. 01-16 Y
C959	87-018-134-089		CAP, TC-U 0. 01-16 Y
C960	87-010-263-089		CAP, E 100-10
C961	87-018-134-089		CAP, TC-U 0. 01-16 Y
C962	87-018-209-089		CAP, TC-U 0. 1-50 F
C963	87-010-263-089		CAP, E 100-10
C965	87-018-134-089		CAP, TC-U 0. 01-16 Y
C966	87-010-263-089		CAP, E 100-10
CL951	87-030-258-089		VIB, CER KBR-4. 0 MKSTF
L951	87-003-149-089		COIL, 47UH
L952	87-005-514-089		COIL, 8. 2UH J LAL02
L953	87-003-149-089		COIL, 47UH

FRONT C. B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C901	87-010-920-089		CAP, E 22-16 SRE
C902	87-010-920-089		CAP, E 22-16 SRE
C903	87-018-208-089		CAP, TC-U 0. 047-50 F
C908	87-010-922-089		CAP, E 33-25 SRE
C909	87-018-148-089		CAP, TC-U 12P-50 CH
C912	87-018-208-089		CAP, TC-U 0. 047-50 F
C951	87-018-121-089		CAP, TC-U 150P-50 B〈Z〉
C952	87-018-121-089		CAP, TC-U 150P-50 B〈Z〉
C953	87-018-121-089		CAP, TC-U 150P-50 B〈Z〉
D924	87-001-124-089		LED SLZ 381C-02-T1
D925	87-001-124-089		LED SLZ 381C-02-T1
D926	87-001-124-089		LED SLZ 381C-02-T1
D927	87-001-124-089		LED SLZ 381C-02-T1
D928	87-002-863-080		LED, LT3S43B
D929	87-001-294-089		LED SLZ 481C-02-T1

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
D930	87-001-294-089		LED SLZ 481C-02-T1
FL901	80-JU4-628-019		FL, 9-LT-22GK
J901	87-009-206-019		JACK, PIN JPJ3844-01
L901	87-005-239-089		COIL, 100UH
RV901	87-024-329-019		VR, 10KB RK09K113-4
SW903	87-036-214-089		SW, TACT EVQ21409K
SW904	87-036-214-089		SW, TACT EVQ21409K
SW905	87-036-214-089		SW, TACT EVQ21409K
SW906	87-036-214-089		SW, TACT EVQ21409K
SW907	87-036-214-089		SW, TACT EVQ21409K
SW908	87-036-214-089		SW, TACT EVQ21409K
SW910	87-036-214-089		SW, TACT EVQ21409K
SW911	87-036-214-089		SW, TACT EVQ21409K
SW912	87-036-214-089		SW, TACT EVQ21409K
SW913	87-036-214-089		SW, TACT EVQ21409K
SW914	87-036-214-089		SW, TACT EVQ21409K
SW915	87-036-214-089		SW, TACT EVQ21409K
SW916	87-036-214-089		SW, TACT EVQ21409K
SW917	87-036-214-089		SW, TACT EVQ21409K
SW918	87-036-214-089		SW, TACT EVQ21409K
SW919	87-036-214-089		SW, TACT EVQ21409K
SW920	87-036-214-089		SW, TACT EVQ21409K
SW921	87-036-214-089		SW, TACT EVQ21409K
SW931	87-036-207-019		SW, SL 2-2-2 VOL12B
SW932	87-036-212-019		SW, SL 2-2-3 FOL9B
X901	87-030-194-010		VIB, XTAL 32. 768K5PPM
X902	87-030-203-089		VIB, CER KBR4. 19MKS

KEY SWITCH C. B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
D922	87-001-123-089		LED SLZ 981C-02TI
SW901	87-036-214-089		SW, TACT EVQ21409K
SW902	87-036-214-089		SW, TACT EVQ21409K
SW922	87-036-214-089		SW, TACT EVQ21409K
SW923	87-036-214-089		SW, TACT EVQ21409K
SW924	87-036-214-089		SW, TACT EVQ21409K
SW925	87-036-214-089		SW, TACT EVQ21409K
SW926	87-036-214-089		SW, TACT EVQ21409K
SW927	87-036-214-089		SW, TACT EVQ21409K
SW929	87-036-214-089		SW, TACT EVQ21409K
SW930	87-036-214-089		SW, TACT EVQ21409K

POWER-1 C. B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
⚠C101	S0-05C-001-010		CAP, FILM 0. 22-250
C103	S9-EVC-000-210		CAP, CERA 3300P-250〈K, DH, KE〉
⚠F101	S0-05F-001-010		FUSE, T1. 6A 250V〈K, DH, KE〉
⚠F101	87-035-373-010		FUSE, 2A 250V〈Z〉
⚠J101	S0-051-NLE-T00		AC JACK〈K, DH, KE〉
⚠J101	S0-05C-N01-010		AC INLET, CCT9302-01〈Z〉
⚠L101	S0-05L-001-010		COIL, CHOKE 33MH 0. 3A

POWER-2 C. B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
⚠C102	S9-EVC-000-210		CAP, TC-U 3300P-250〈Z〉
C102-1	S9-EVC-000-210		CAP, CERA 3300P-250〈K, DH, KE〉
C102-2	S9-EVC-000-210		CAP, CERA 3300P-250〈K, DH, KE〉
C104	S0-22Z-020-000		CAP, ELECT 150-400〈K, DH, KE〉
C104	S1-22Z-020-000		CAP, E 150-400〈Z〉
C105	S0-05C-001-010		CAP, FILM 0. 047-630〈K, DH, KE〉
C105	S0-05C-001-050		CAP, FILM 0. 047-630〈Z〉
C106	S0-05C-001-010		CAP, 100P-1000〈K, DH, KE〉
C106	S0-05C-001-060		CAP, TC-U 100P-1K〈Z〉
C107	S0-05C-001-070		CAP, E 1-400〈Z〉
C110	S0-4EC-001-100		CAP, FILM 1000P-50〈Z〉
C201	S0-05C-002-010		CAP, 0. 047-50〈K, DH, KE〉
C202	87-010-029-010		CAP, 0. 047-50〈K, DH, KE〉
C203	S0-9EC-000-070		CAP, ELECT 680-25〈K, DH, KE〉
C203	S0-05C-002-030		CAP, E 680-25〈Z〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C204	S0-9EC-000-070		CAP, ELECT 680-25〈K, DH, KE〉
C204	87-010-385-010		CAP, E 220-25〈Z〉
C205	S0-9EC-000-070		CAP, ELECT 680-25〈K, DH, KE〉
C205	87-010-429-010		CAP, E 680-16〈Z〉
C206	S1-9A0-C02-060		CAP, E 1200-10
C207	87-010-622-010		CAP, E 470-16
C208	87-010-263-010		CAP, E 100-10
C209	87-010-622-010		CAP, ELECT 470-16〈K, DH, KE〉
C209	S0-4UC-002-090		CAP, E 560-10〈Z〉
C210	87-015-869-010		CAP, ELECT 100-16〈K, DH, KE〉
C210	S0-4UC-002-090		CAP, E 560-10〈Z〉
C211	87-015-869-010		CAP, ELECT 100-16〈K, DH, KE〉
C211	87-010-263-010		CAP, E 100-10〈Z〉
L103	S0-05L-002-010		COIL, CHOKE 39UH 1A〈Z〉
L201	S0-05L-002-010		COIL, CHOKE 39UH 1A
L202	S0-05L-002-010		COIL, CHOKE 39UH 1A
△PC101	S0-05P-C01-010		PHOTO COUPLER, ON3171R〈K, DH, KE〉
△PC101	S1-6AJ-PC1-010		PHOTO COUPLER, PC817〈Z〉
R101	83-131-616-010		RES, NF 2. 2 3W〈K, DH, KE〉
R101	S0-4UR-001-010		RES, 2. 2M 1/2W〈Z〉
R102	S0-05R-001-020		RES, 47K 3W
R108	S7-025-507-080		RES, NF 0. 22 1W〈K, DH, KE〉
R108	S0-4ER-001-080		RES, 0. 22〈Z〉
R201	S0-05R-002-010		RES, 240 1/2W〈Z〉
R202	S0-05R-002-020		RES, 100-470〈Z〉
R203	87-025-306-010		RES, 5. 6K 1/4W〈Z〉
R205	87-025-307-010		RES, 1. 5K 1/4W〈Z〉
R214	87-025-245-010		RES, 820 1W
RV201	S0-9ET-000-010		SFR, 1K〈K, DH, KE〉
RV201	S0-4ER-V02-010		SFR, 1K〈Z〉
△T101	S0-4ET-001-010		TRANSFORMER, T-9003-3〈K, DH, KE〉
△T101	S0-4UR-001-010		TRANSFORMER, T-9009-4〈Z〉

RELAY-1 C. B

C369	87-018-209-089		CAP, TC-U 0. 1-50 F
C390	87-018-209-089		CAP, TC-U 0. 1-50 F

RELAY-2 C. B

RELAY-3 C. B

PCB-L	S8-059-013-470		RELAY-3 PCB ASSY

RELAY-4 C. B

PCB-M	S8-059-013-050		RELAY-4 PCB ASSY

RELAY-5 C. B

BASE C. B

CP1	S6-808-080-030		PHOTO(REEL)SENSOR ON1385
PCB-O	S8-059-133-020		BASE PCB ASSY

SWITCH C. B

PCB-P	S8-059-163-330		SWITCH PCB ASSY(W/SW1, 2, 3)

REF. NO	PART NO.	カンリ NO.	DESCRIPTION

START SENSOR C. B

PCB-Q	S8-059-163-160		SENSOR PCB RM ASSY

END SENSOR C. B

PCB-R	S8-059-163-010		SENSOR PCB LM ASSY

LED C. B

LED1	S8-059-133-030		LED ASSY(W/PCB-S)

ACE HEAD C. B

ACEH	S6-204-150-060		ACE HEAD HV22521(W/PCB-T)

ERASE HEAD C. B

FEH	S6-204-150-030		FULL ERASE HEAD(W/PCB-U)

SPEED DET C. B

C1	87-010-452-089		C-CAP, 1-16 F
C2	87-010-452-089		C-CAP, 1-16 F
C3	87-010-452-089		C-CAP, 1-16 F
C4	87-010-197-089		C-CAP, S 0. 01-25 B
C13	87-010-197-089		C-CAP, S 0. 01-25 B
L1	87-003-102-089		COIL, 10UH
X1	87-030-214-089		VIB, CER KBR6. 0MKS

CONNECTOR C. B

C430	87-018-127-089		CAP, TC-U 470P-50 B〈Z〉
C431	87-018-127-089		CAP, TC-U 470P-50 B〈Z〉
C436	87-018-134-089		CAP, TC-U 0. 01-16 Y〈Z〉
C437	87-018-118-089		CAP, TC-U 82P-50 B〈Z〉
CN411	87-009-205-019		CONN, 21P HXC1521〈Z, K〉
L405	87-003-286-089		COIL 56UH〈Z〉
L406	87-003-102-089		COIL, 10UH〈Z〉

PAL SWITCH C. B

SW801	87-036-328-019		SW, SL 1-1-2 SSSF01〈DH〉

POWER SUB C. B

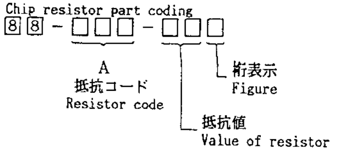
C103	S0-05C-010-210		CAP, TC-U 2200P-250〈Z〉

MISCELLANEOUS

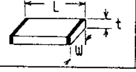
	S8-059-010-180		UPPER DRUM(W/VIDEO HEAD)
	S8-059-013-040		LOWER DRUM ASSY
M1	S6-004-090-010		CYLINDER MOTOR TM85
M2	S8-059-073-020		CAPSTAN MOTOR ASSY
M3	S8-059-113-010		LOADING MOTOR ASSY
SW4	S6-401-011-510		LEAF SW

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

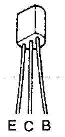
チップ抵抗部品コードの成り立ち
Chip resistor part coding



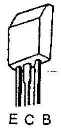
チップ抵抗
Chip resistor

<table>
<tr><th rowspan="2">Wattage
容量</th><th rowspan="2">Type
種類</th><th rowspan="2">Tolerance
許容誤差</th><th rowspan="2">Symbol
記号</th><th colspan="4">Dimensions／寸法(mm)</th><th rowspan="2">Resistor Code : A
抵抗コード : A</th></tr>
<tr><th>Form/外形</th><th>L</th><th>W</th><th>t</th></tr>
<tr><td>1/32W</td><td>1608</td><td>±5%</td><td>CJ</td><td rowspan="3"> </td><td>1.6</td><td>0.8</td><td>0.35</td><td>108</td></tr>
<tr><td>1/10W</td><td>2125</td><td>±5%</td><td>CJ</td><td>2</td><td>1.25</td><td>1.45</td><td>118</td></tr>
<tr><td>1/8W</td><td>3216</td><td>±5%</td><td>CJ</td><td>3.2</td><td>1.6</td><td>0.5
~0.7</td><td>128</td></tr>
</table>

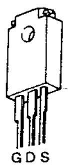
TRANSISTOR ILLUSTRATION



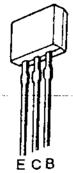
2SA933
2SC1740
2SC4729



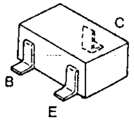
2SB733



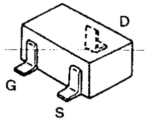
2SK903



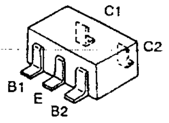
DTA144ES
DTC144ES



2SA1162
2SC2412
2SC2712
DTA144EK
DTC144EK

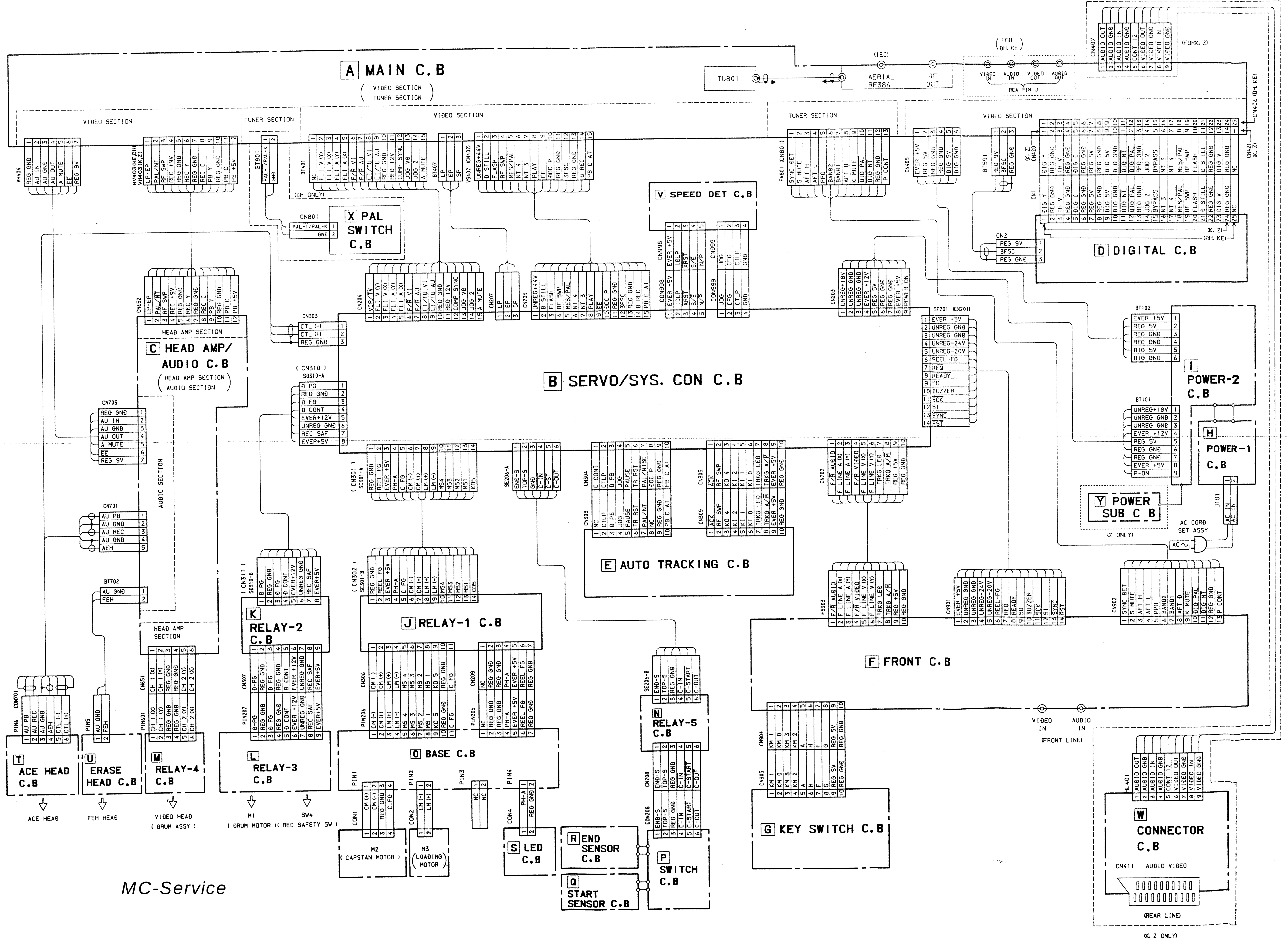


2SK621
DTC124ES
DTC343TS

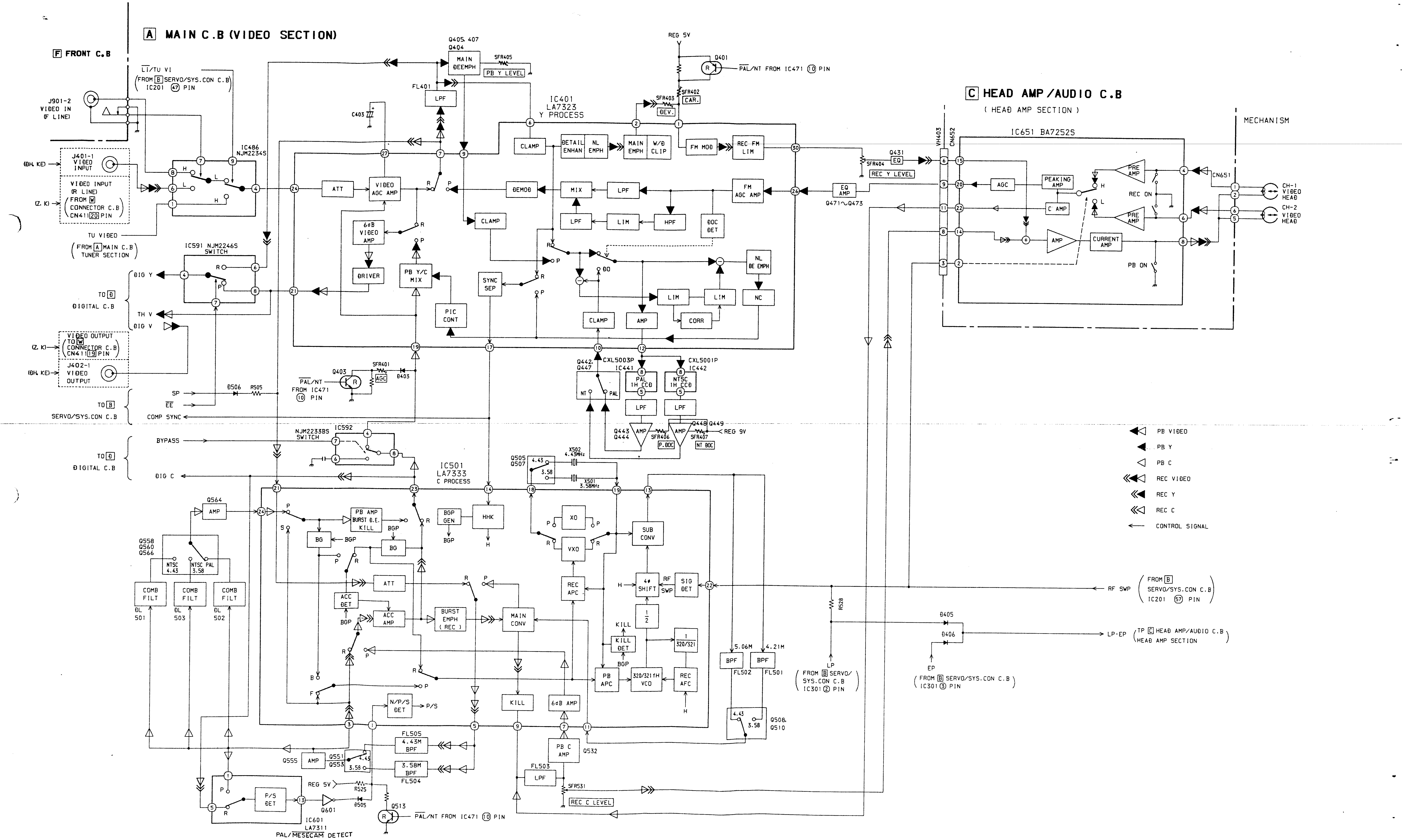


FMA2
FMW1

WIRE HARNESS DIAGRAM


A MAIN C.B
VIDEO SECTION
TUNER SECTION
TU801
(IEC)
AERIAL RF386
RF OUT
(FOR DH, KE)
VIDEO IN
AUDIO IN
VIDEO OUT
AUDIO OUT
RCA PIN J
CN407
(FOR K, Z)
CN406 (DH, KE)
VH404
HV403(KE,DH) VH403(K,Z)
BT801
BT401
BT407
VS402 (CN402)
FV801 (CN801)
CN405
BT591
(K, Z) CN420
CN421 (K, Z)
(DH ONLY)
CN801
X PAL SWITCH C.B
V SPEED DET C.B
CN998
CN999
CN1
CN2
D DIGITAL C.B
(K, Z)
(DH, KE)
CN652
C HEAD AMP/ AUDIO C.B
HEAD AMP SECTION
AUDIO SECTION
CN303
CN204
CN207
CN205
CN203
SF201 (CN201)
B SERVO/SYS. CON C.B
(CN310) SG310-A
CN703
CN701
BT702
CN301-A SG301-A
SE206-A
CN304
CN305
CN202
BT102
I POWER-2 C.B
BT101
H POWER-1 C.B
Y POWER SUB C B
(Z ONLY)
J101
AC CORD SET ASSY
CN308
CN309
E AUTO TRACKING C.B
(CN311) SG310-B
K RELAY-2 C.B
(CN302) SG301-B
J RELAY-1 C.B
FS903
CN901
CN902
F FRONT C.B
HEAD AMP SECTION
CN651
CN307
CN306
CN209
SE206-B
N RELAY-5 C.B
CN904
VIDEO IN
AUDIO IN
(FRONT LINE)
CN701
PIN6
PIN5
PIN601
PIN207
PIN206
PIN205
T ACE HEAD C.B
U ERASE HEAD C.B
M RELAY-4 C.B
L RELAY-3 C.B
O BASE C.B
PIN1
PIN2
PIN3
PIN4
CN208
CN905
G KEY SWITCH C.B
HL401
W CONNECTOR C.B
CN411 AUDIO VIDEO
(REAR LINE)
(K, Z ONLY)
ACE HEAD
FEH HEAD
VIDEO HEAD (DRUM ASSY)
M1 (DRUM MOTOR)
SW4 (REC SAFETY SW)
CON1
CON2
CON4
CON208
M2 (CAPSTAN MOTOR)
M3 (LOADING MOTOR)
S LED C.B
R END SENSOR C.B
Q START SENSOR C.B
P SWITCH C.B

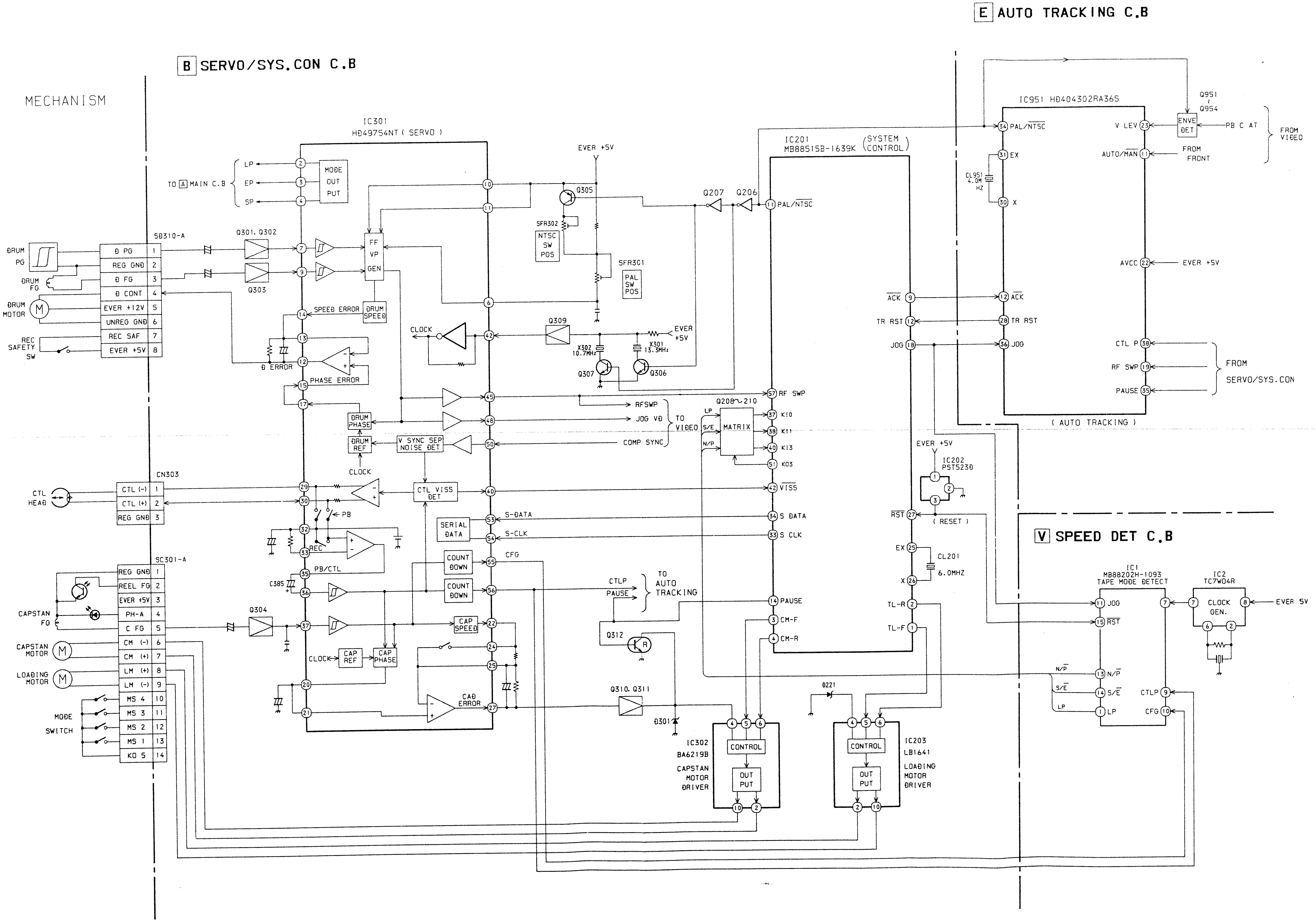
BLOCK DIAGRAM – 1 (VIDEO SECTION)



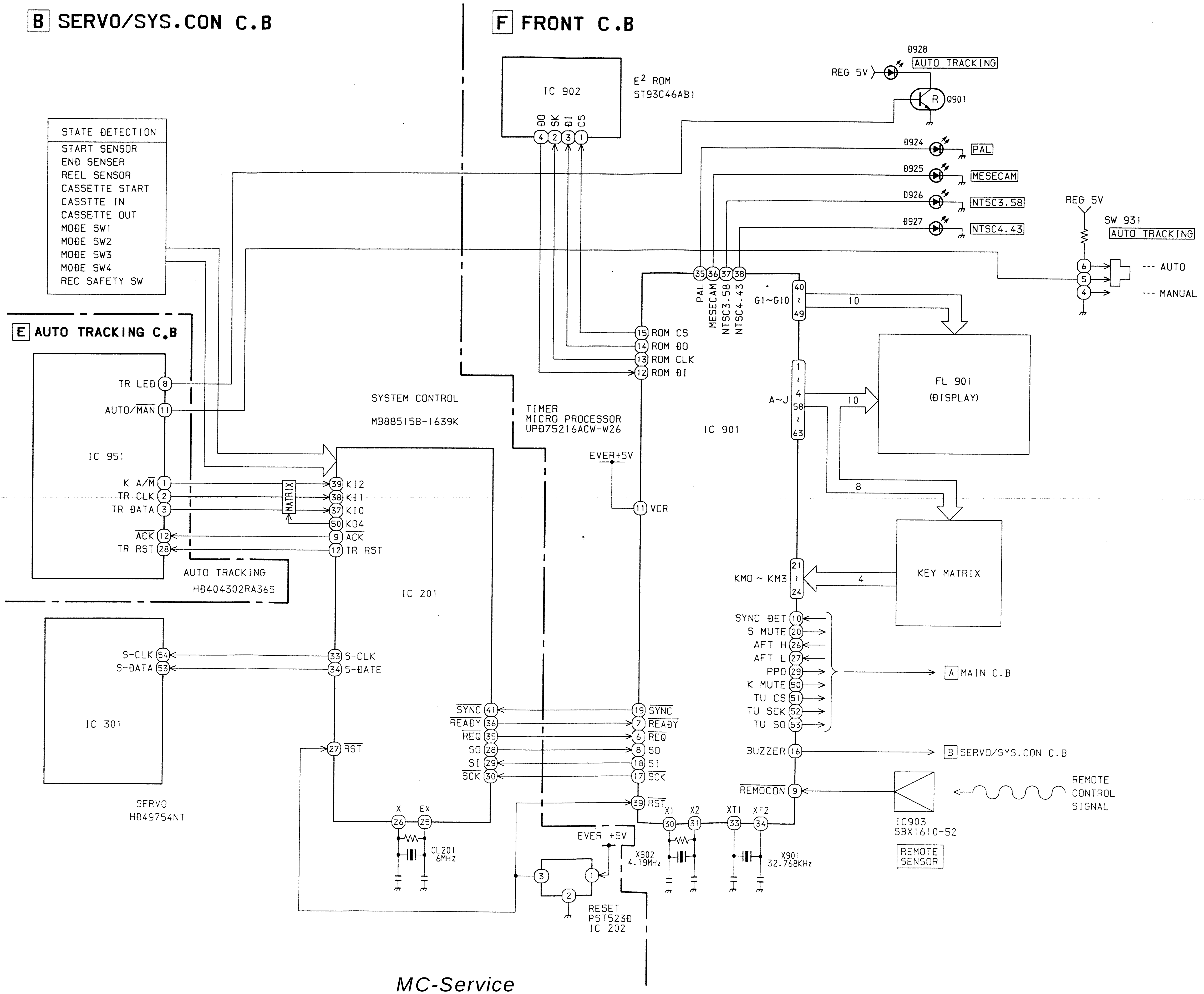
F FRONT C.B
A MAIN C.B (VIDEO SECTION)
C HEAD AMP / AUDIO C.B
(HEAD AMP SECTION)
MECHANISM
J901-2
VIDEO IN
(F LINE)
LI/TU VI
(FROM B SERVO/SYS.CON C.B)
IC201 47 PIN
J401-1
VIDEO INPUT
VIDEO INPUT
(R LINE)
(FROM W CONNECTOR C.B
CN411 20 PIN)
TU VIDEO
(FROM A MAIN C.B TUNER SECTION)
IC486
NJM2234S
IC591 NJM2246S
SWITCH
DIG Y
TO D
DIGITAL C.B
TH V
DIG V
VIDEO OUTPUT
(TO W CONNECTOR C.B
CN411 19 PIN)
J402-1
VIDEO OUTPUT
TO B
SERVO/SYS.CON C.B
SP
EE
COMP SYNC
BYPASS
DIG C
NJM2233BS
SWITCH
IC592
Q405, 407
Q404
MAIN DEEMPH
SFR405
PB Y LEVEL
FL401
LPF
C403
IC401
LA7323
Y PROCESS
VIDEO AGC AMP
ATT
6dB VIDEO AMP
DRIVER
PB Y/C MIX
PIC CONT
SYNC SEP
CLAMP
DETAIL ENHAN
NL EMPH
MAIN EMPH
W/D CLIP
FM MOD
REC FM LIM
DEMOD
MIX
LPF
FM AGC AMP
LIM
HPF
DOC DET
NL DE EMPH
NC
CORR
AMP
REG 5V
Q401
PAL/NT FROM IC471 10 PIN
SFR403
DEV.
SFR402
CAR.
Q403
SFR401
AGC
D403
PAL/NT FROM IC471 10 PIN
D506
R505
Q442, Q447
CXL5003P
IC441
PAL 1H CCD
CXL5001P
IC442
NTSC 1H CCD
Q443
Q444
SFR406
P.DOC
Q448 Q449
SFR407
NT DOC
REG 9V
Q431
EQ
SFR404
REC Y LEVEL
EQ AMP
Q471~Q473
VH403
CN652
IC651 BA7252S
AGC
PEAKING AMP
C AMP
PRE AMP
REC ON
PB ON
CURRENT AMP
CN651
CH-1 VIDEO HEAD
CH-2 VIDEO HEAD
IC501
LA7333
C PROCESS
Q505
Q507
X502
4.43MHz
X501
3.58MHz
Q564
AMP
PB AMP BURST B.E. KILL
BGP GEN
HHK
BG
XO
VXO
SUB CONV
Q558
Q560
Q566
NTSC 4.43
NTSC PAL 3.58
COMB FILT
DL 501
DL 503
DL 502
ATT
ACC DET
ACC AMP
BURST EMPH (REC)
MAIN CONV
REC APC
4φ SHIFT
RF SWP
SIG DET
1/2
KILL DET
1 320/321
PB APC
320/321fH VCO
REC AFC
5.06M
4.21M
BPF
FL502
FL501
Q508
Q510
N/P/S DET
P/S
KILL
6dB AMP
PB C AMP
Q532
FL503
LPF
SFR531
REC C LEVEL
FL505
4.43M BPF
3.58M BPF
FL504
Q555
Q551
Q553
REG 5V
R525
D505
Q601
Q513
PAL/NT FROM IC471 10 PIN
P/S DET
IC601
LA7311
PAL/MESECAM DETECT
RF SWP
(FROM B SERVO/SYS.CON C.B IC201 57 PIN)
R528
D405
D406
LP·EP
(TP C HEAD AMP/AUDIO C.B HEAD AMP SECTION)
LP
(FROM B SERVO/SYS.CON C.B IC301 2 PIN)
EP
(FROM B SERVO/SYS.CON C.B IC301 3 PIN)
PB VIDEO
PB Y
PB C
REC VIDEO
REC Y
REC C
CONTROL SIGNAL

MC-Service

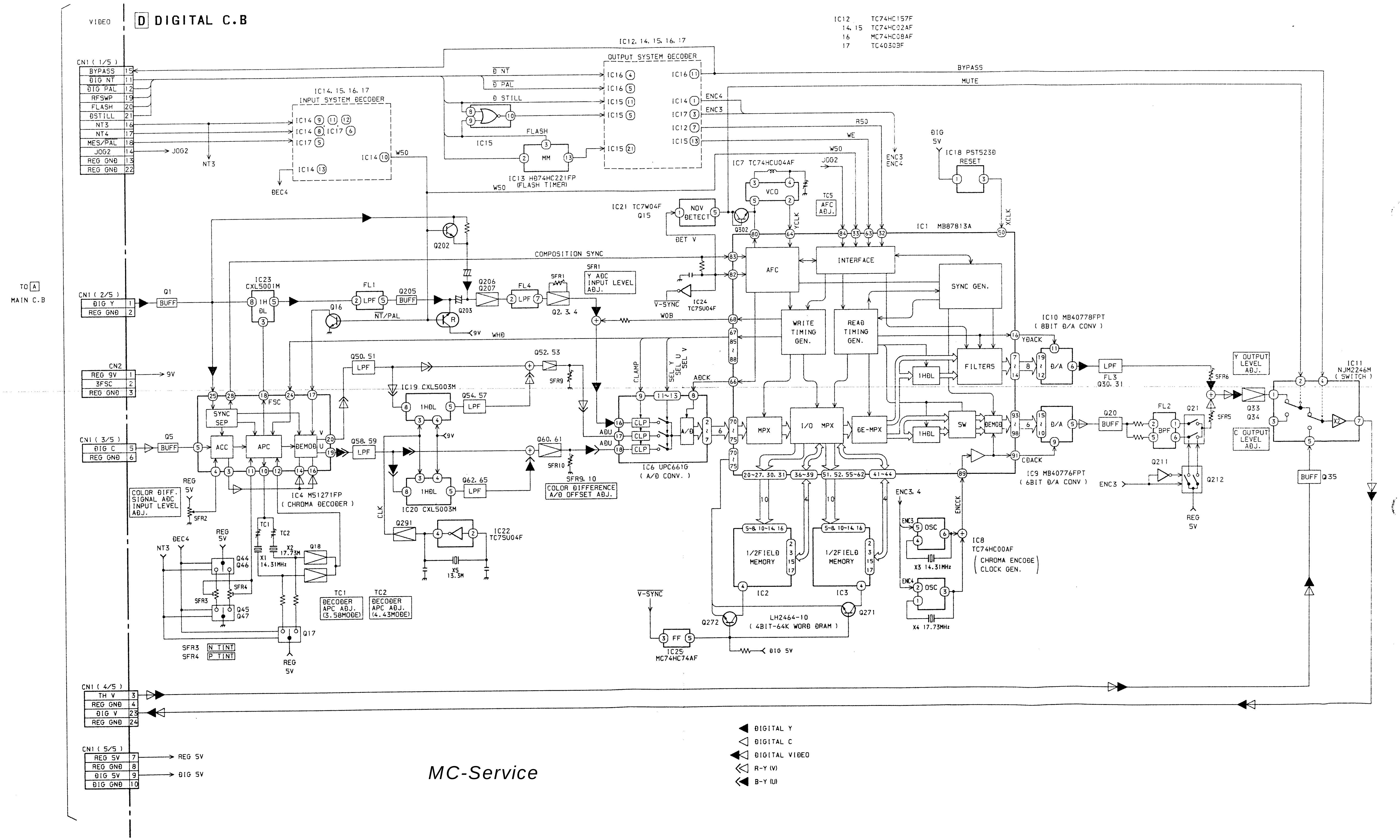
BLOCK DIAGRAM – 2 (SERVO/SYSTEM CONTROL SECTION)


E AUTO TRACKING C.B
B SERVO/SYS.CON C.B
MECHANISM
IC301
HD49754NT (SERVO)
MODE OUT PUT
LP
EP
SP
TO A MAIN C.B
SB310-A
D PG
REG GND
D FG
D CONT
EVER +12V
UNREG GND
REC SAF
EVER +5V
DRUM PG
DRUM FG
DRUM MOTOR
REC SAFETY SW
Q301, Q302
Q303
FF VP GEN
SPEED ERROR
DRUM SPEED
D ERROR
PHASE ERROR
CLOCK
DRUM PHASE
DRUM REF
V SYNC SEP NOISE DET
EVER +5V
Q305
SFR302
NTSC SW POS
SFR301
PAL SW POS
Q309
X302 10.7MHz
X301 13.3MHz
Q307
Q306
EVER +5V
Q207
Q206
RFSWP
JOG VD
COMP SYNC
TO VIDEO
Q208~210
MATRIX
LP
S/E
N/P
CN303
CTL (-)
CTL (+)
REG GND
CTL HEAD
CTL VISS DET
PB
REC
PB/CTL
SERIAL DATA
S-DATA
S-CLK
COUNT DOWN
CFG
C385
Q304
CAP SPEED
CAP REF
CAP PHASE
CAD ERROR
CTLP
PAUSE
TO AUTO TRACKING
SC301-A
REG GND
REEL FG
EVER +5V
PH-A
C FG
CM (-)
CM (+)
LM (+)
LM (-)
MS 4
MS 3
MS 2
MS 1
KO 5
CAPSTAN FG
CAPSTAN MOTOR
LOADING MOTOR
MODE SWITCH
Q312
Q310, Q311
D301
IC302
BA6219B
CAPSTAN MOTOR DRIVER
CONTROL
OUT PUT
IC201
MB88515B-1639K (SYSTEM CONTROL)
PAL/NTSC
RF SWP
K10
K11
K13
K03
VISS
S DATA
S CLK
PAUSE
CM-F
CM-R
ACK
TR RST
JOG
RST
(RESET)
EX
X
TL-R
TL-F
CL201
6.0MHZ
EVER +5V
IC202
PST523D
D221
IC203
LB1641
LOADING MOTOR DRIVER
IC951 HD404302RA365
Q951 ~ Q954
ENVE DET
PB C AT
FROM VIDEO
PAL/NTSC
V LEV
EX
AUTO/MAN
FROM FRONT
CL951 4.0M HZ
X
AVCC
EVER +5V
ACK
TR RST
JOG
CTL P
RF SWP
PAUSE
FROM SERVO/SYS.CON
(AUTO TRACKING)
V SPEED DET C.B
IC1
MB88202H-1093
TAPE MODE DETECT
IC2
TC7W04R
CLOCK GEN.
EVER 5V
JOG
RST
N/P
S/E
LP
CTLP
CFG

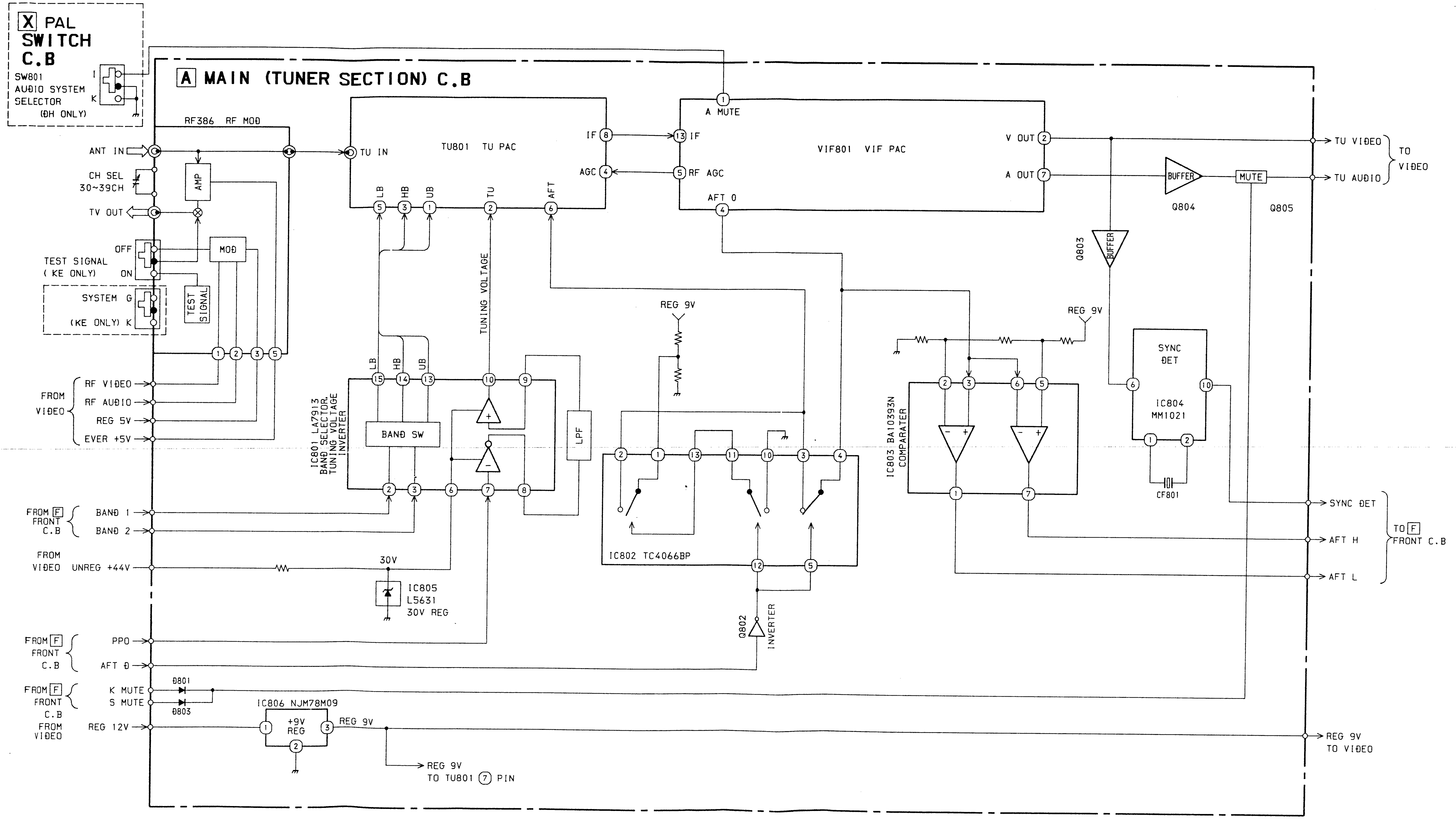
BLOCK DIAGRAM – 3 (SYSTEM CONTROL SECTION)


B SERVO/SYS.CON C.B
F FRONT C.B
STATE DETECTION
START SENSOR
END SENSER
REEL SENSOR
CASSETTE START
CASSTTE IN
CASSETTE OUT
MODE SW1
MODE SW2
MODE SW3
MODE SW4
REC SAFETY SW
E AUTO TRACKING C.B
TR LED 8
AUTO/MAN 11
IC 951
K A/M 1
TR CLK 2
TR DATA 3
ACK 12
TR RST 28
MATRIX
AUTO TRACKING
HD404302RA36S
SYSTEM CONTROL
MB88515B-1639K
39 KI2
38 KI1
37 KI0
50 KO4
9 ACK
12 TR RST
IC 201
IC 301
S-CLK 54
S-DATA 53
33 S-CLK
34 S-DATE
SERVO
HD49754NT
SYNC 41
READY 36
REQ 35
SO 28
SI 29
SCK 30
27 RST
X 26
EX 25
CL201
6MHz
3
2
1
RESET
PST523D
IC 202
EVER +5V
TIMER
MICRO PROCESSOR
UPD75216ACW-W26
IC 902
E² ROM
ST93C46AB1
DO SK DI CS
4 2 3 1
15 ROM CS
14 ROM DO
13 ROM CLK
12 ROM DI
EVER+5V
11 VCR
19 SYNC
7 READY
6 REQ
8 SO
18 SI
17 SCK
39 RST
X1 30
X2 31
XT1 33
XT2 34
X902
4.19MHz
X901
32.768KHz
IC 901
35 36 37 38
PAL
MESECAM
NTSC3.58
NTSC4.43
G1~G10 40 ~ 49
10
A~J 1 ~ 4 58 ~ 63
10
8
FL 901
(DISPLAY)
KEY MATRIX
KM0 ~ KM3 21 ~ 24
4
SYNC DET 10
S MUTE 20
AFT H 26
AFT L 27
PPO 29
K MUTE 50
TU CS 51
TU SCK 52
TU SO 53
A MAIN C.B
BUZZER 16
B SERVO/SYS.CON C.B
REMOCON 9
IC903
SBX1610-52
REMOTE SENSOR
REMOTE CONTROL SIGNAL
REG 5V
D928
AUTO TRACKING
Q901
R
D924
PAL
D925
MESECAM
D926
NTSC3.58
D927
NTSC4.43
REG 5V
SW 931
AUTO TRACKING
6
5
4
--- AUTO
--- MANUAL

BLOCK DIAGRAM – 4 (DIGITAL SECTION)


VIDEO
D DIGITAL C.B
TO A MAIN C.B
CN1 (1/5)
BYPASS 15
DIG NT 11
DIG PAL 12
RFSWP 19
FLASH 20
DSTILL 21
NT3 16
NT4 17
MES/PAL 18
JOG2 14
REG GND 13
REG GND 22
JOG2
NT3
DEC4
IC14, 15, 16, 17 INPUT SYSTEM DECODER
IC12, 14, 15, 16, 17 OUTPUT SYSTEM DECODER
IC12 TC74HC157F
14, 15 TC74HC02AF
16 MC74HC08AF
17 TC4030BF
D NT
D PAL
D STILL
FLASH
IC15
MM
IC13 HD74HC221FP (FLASH TIMER)
W50
ENC4
ENC3
RSD
WE
BYPASS
MUTE
DIG 5V
IC18 PST523D RESET
IC7 TC74HCU04AF
VCO
JOG2
TC5 AFC ADJ.
IC21 TC7W04F
Q15
NOV DETECT
Q302
DET V
YCLK
XCLK
IC1 MB87813A
COMPOSITION SYNC
SFR1 Y ADC INPUT LEVEL ADJ.
V-SYNC
IC24 TC7SU04F
WOB
AFC
INTERFACE
SYNC GEN.
WRITE TIMING GEN.
READ TIMING GEN.
IC10 MB40778FPT (8BIT D/A CONV)
YDACK
FILTERS
1HDL
D/A
LPF
FL3
Q30, 31
Y OUTPUT LEVEL ADJ.
IC11 NJM2246M (SWITCH)
SFR6
Q33
Q34
C OUTPUT LEVEL ADJ.
BUFF Q35
IC23 CXL5001M
1H DL
FSC
FL1
Q205
BUFF
Q16
NT/PAL
Q202
Q206 Q207
FL4
Q2, 3, 4
Q203
9V
WHD
CN1 (2/5)
DIG Y
REG GND
Q1
BUFF
CN2
REG 9V
3FSC
REG GND
9V
Q50, 51
LPF
IC19 CXL5003M
Q54, 57
Q52, 53
SFR9
CLAMP
SEL Y
SEL U
SEL V
ADCK
ADU
CLP
A/D
IC6 UPC661G (A/D CONV.)
MPX
I/O MPX
DE-MPX
SW
DEMOD
IC9 MB40776FPT (6BIT D/A CONV)
CDACK
Q20
BUFF
FL2
BPF
Q21
SFR5
Q211
Q212
ENC3
REG 5V
SYNC SEP
ACC
APC
DEMOD
CN1 (3/5)
DIG C
REG GND
Q5
BUFF
IC4 M51271FP (CHROMA DECODER)
Q58, 59
LPF
IC20 CXL5003M
Q62, 65
Q60, 61
SFR10
SFR9, 10 COLOR DIFFERENCE A/D OFFSET ADJ.
COLOR DIFF. SIGNAL ADC INPUT LEVEL ADJ.
SFR2
CLK
Q291
IC22 TC7SU04F
X5 13.3M
TC1
TC2
X1 14.31MHz
X2 17.73M
Q18
Q44 Q46
Q45 Q47
SFR3
SFR4
Q17
TC1 DECODER APC ADJ. (3.58MODE)
TC2 DECODER APC ADJ. (4.43MODE)
SFR3 N TINT
SFR4 P TINT
REG 5V
1/2FIELD MEMORY
IC2
IC3
LH2464-10 (4BIT-64K WORD DRAM)
Q272
Q271
V-SYNC
FF
IC25 MC74HC74AF
DIG 5V
ENC3, 4
ENCCK
OSC
X3 14.31MHz
X4 17.73MHz
IC8 TC74HC00AF (CHROMA ENCODE CLOCK GEN.)
CN1 (4/5)
TH V
REG GND
DIG V
REG GND
CN1 (5/5)
REG 5V
REG GND
DIG 5V
DIG GND
REG 5V
DIG 5V
DIGITAL Y
DIGITAL C
DIGITAL VIDEO
R-Y (V)
B-Y (U)

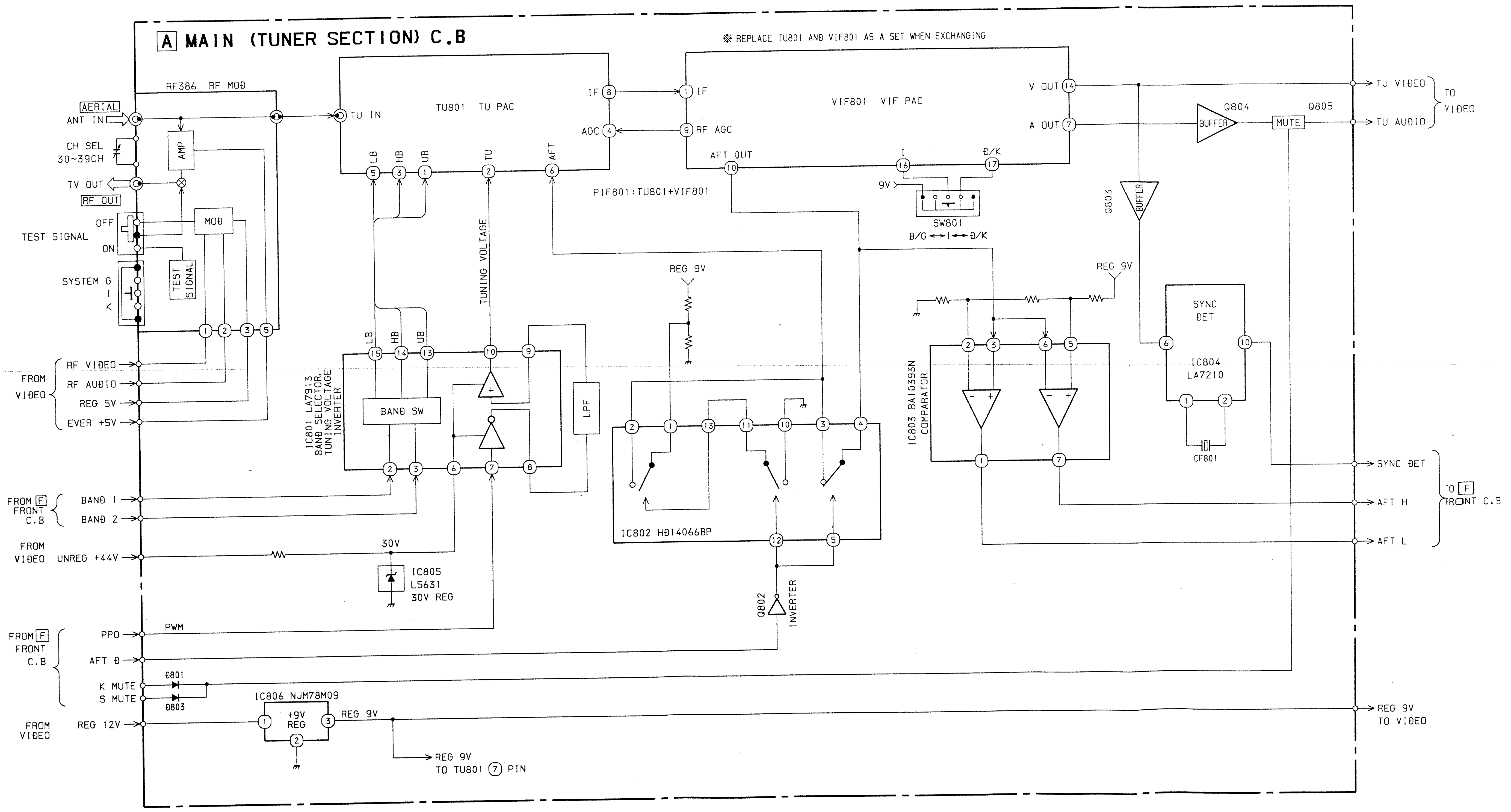
BLOCK DIAGRAM – 5 (TUNER SECTION) MG330KE, DH



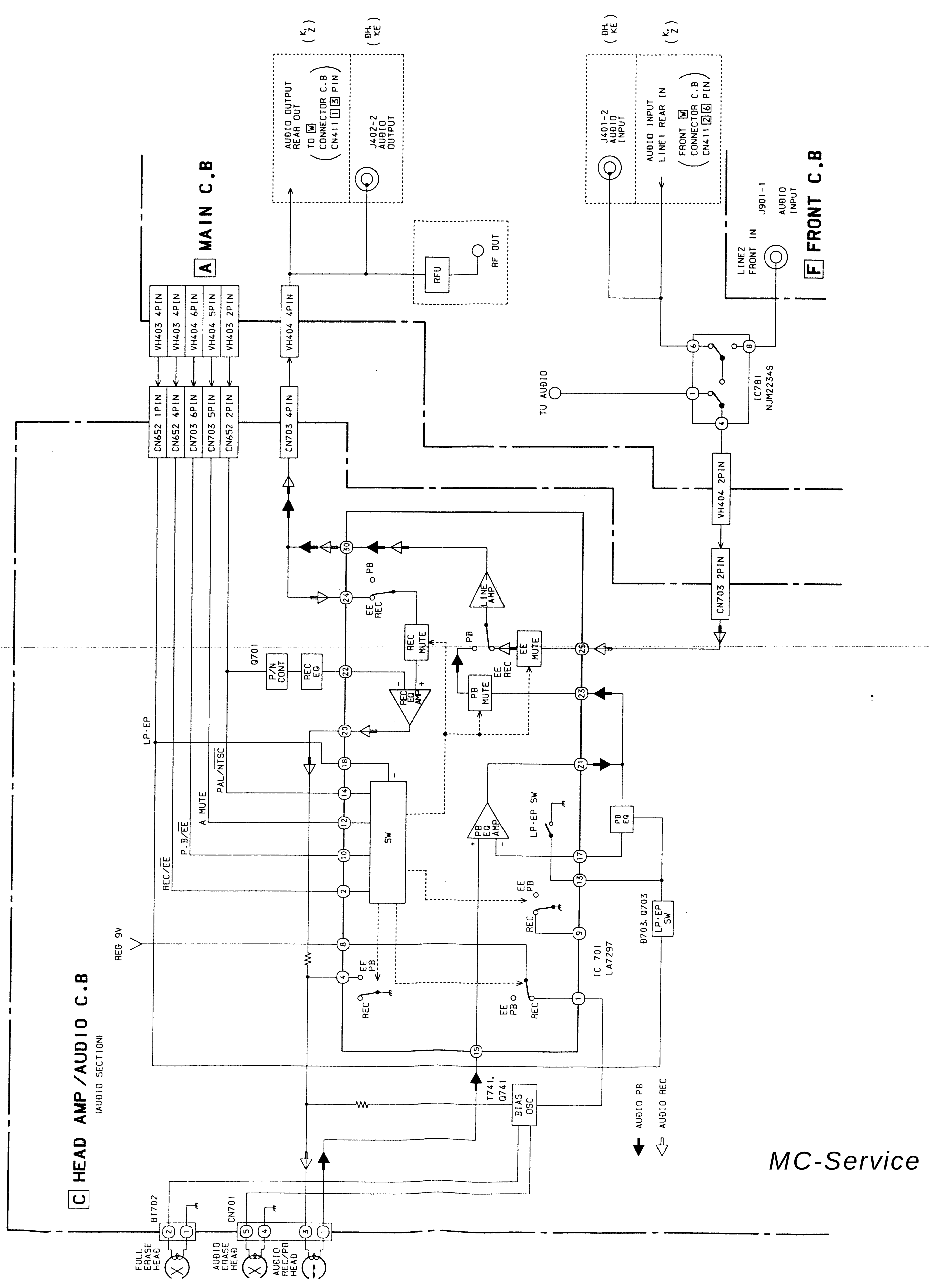
X PAL SWITCH C.B
SW801
AUDIO SYSTEM SELECTOR
(DH ONLY)
I
K
A MAIN (TUNER SECTION) C.B
RF386 RF MOD
ANT IN
CH SEL 30~39CH
TV OUT
AMP
MOD
OFF
TEST SIGNAL (KE ONLY)
ON
SYSTEM G
(KE ONLY) K
TEST SIGNAL
FROM VIDEO
RF VIDEO
RF AUDIO
REG 5V
EVER +5V
TU IN
TU801 TU PAC
IF 8
AGC 4
LB
HB
UB
TU
AFT
TUNING VOLTAGE
IC801 LA7913 BAND SELECTOR, TUNING VOLTAGE INVERTER
BAND SW
LPF
A MUTE
13 IF
5 RF AGC
AFT 0
VIF801 VIF PAC
V OUT 2
A OUT 7
BUFFER
Q804
MUTE
Q805
Q803
BUFFER
TU VIDEO
TU AUDIO
TO VIDEO
REG 9V
REG 9V
IC802 TC4066BP
IC803 BA10393N COMPARATER
SYNC DET
IC804 MM1021
CF801
SYNC DET
AFT H
AFT L
TO F FRONT C.B
FROM F FRONT C.B
BAND 1
BAND 2
FROM VIDEO
UNREG +44V
30V
IC805 L5631 30V REG
Q802
INVERTER
FROM F FRONT C.B
PPO
AFT D
FROM F FRONT C.B
K MUTE
S MUTE
D801
D803
FROM VIDEO
REG 12V
IC806 NJM78M09
+9V REG
REG 9V
REG 9V TO TU801 7 PIN
REG 9V TO VIDEO

MC-Service

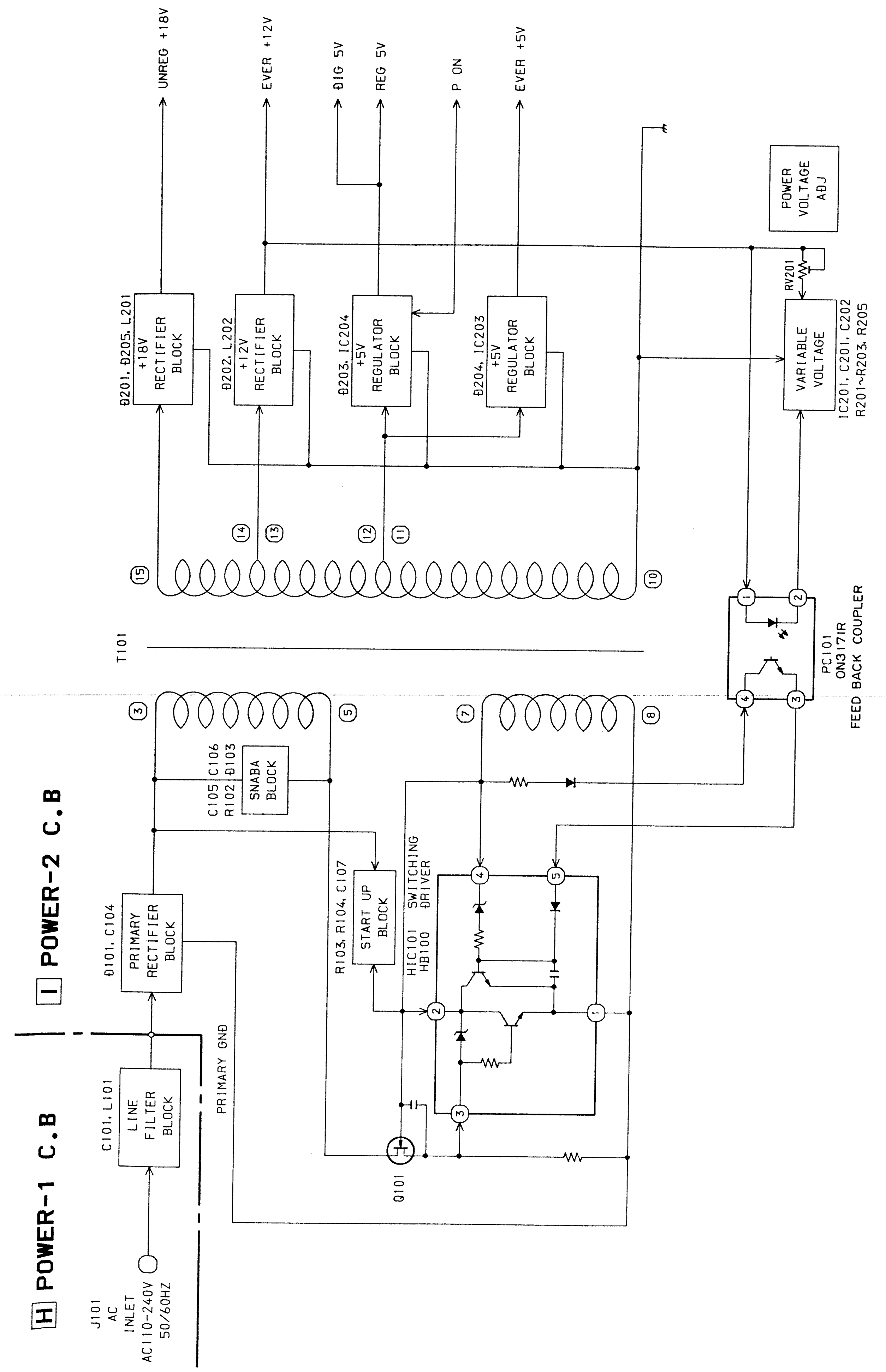
BLOCK DIAGRAM – 6 (TUNER SETION) MG350K, Z


A MAIN (TUNER SECTION) C.B
※ REPLACE TU801 AND VIF801 AS A SET WHEN EXCHANGING
RF386 RF MOD
AERIAL
ANT IN
CH SEL
30~39CH
TV OUT
RF OUT
OFF
TEST SIGNAL
ON
SYSTEM G
I
K
AMP
MOD
TEST SIGNAL
FROM VIDEO
RF VIDEO
RF AUDIO
REG 5V
EVER +5V
TU IN
TU801 TU PAC
IF
AGC
LB
HB
UB
TU
AFT
TUNING VOLTAGE
PIF801:TU801+VIF801
VIF801 VIF PAC
IF
RF AGC
AFT OUT
I
D/K
V OUT
A OUT
9V
SW801
B/G ↔ I ↔ D/K
Q803
BUFFER
Q804
BUFFER
Q805
MUTE
TU VIDEO
TU AUDIO
TO VIDEO
REG 9V
REG 9V
SYNC DET
IC804
LA7210
CF801
IC801 LA7913
BAND SELECTOR,
TUNING VOLTAGE
INVERTER
BAND SW
LPF
IC802 HD14066BP
IC803 BA10393N
COMPARATOR
SYNC DET
AFT H
AFT L
TO F FRONT C.B
FROM F FRONT C.B
BAND 1
BAND 2
FROM VIDEO
UNREG +44V
30V
IC805
L5631
30V REG
Q802
INVERTER
FROM F FRONT C.B
PPO
PWM
AFT D
K MUTE
S MUTE
D801
D803
IC806 NJM78M09
+9V REG
REG 9V
FROM VIDEO
REG 12V
REG 9V
TO TU801 7 PIN
REG 9V
TO VIDEO

BLOCK DIAGRAM – 7 (AUDIO/POWER UNIT SECTION)

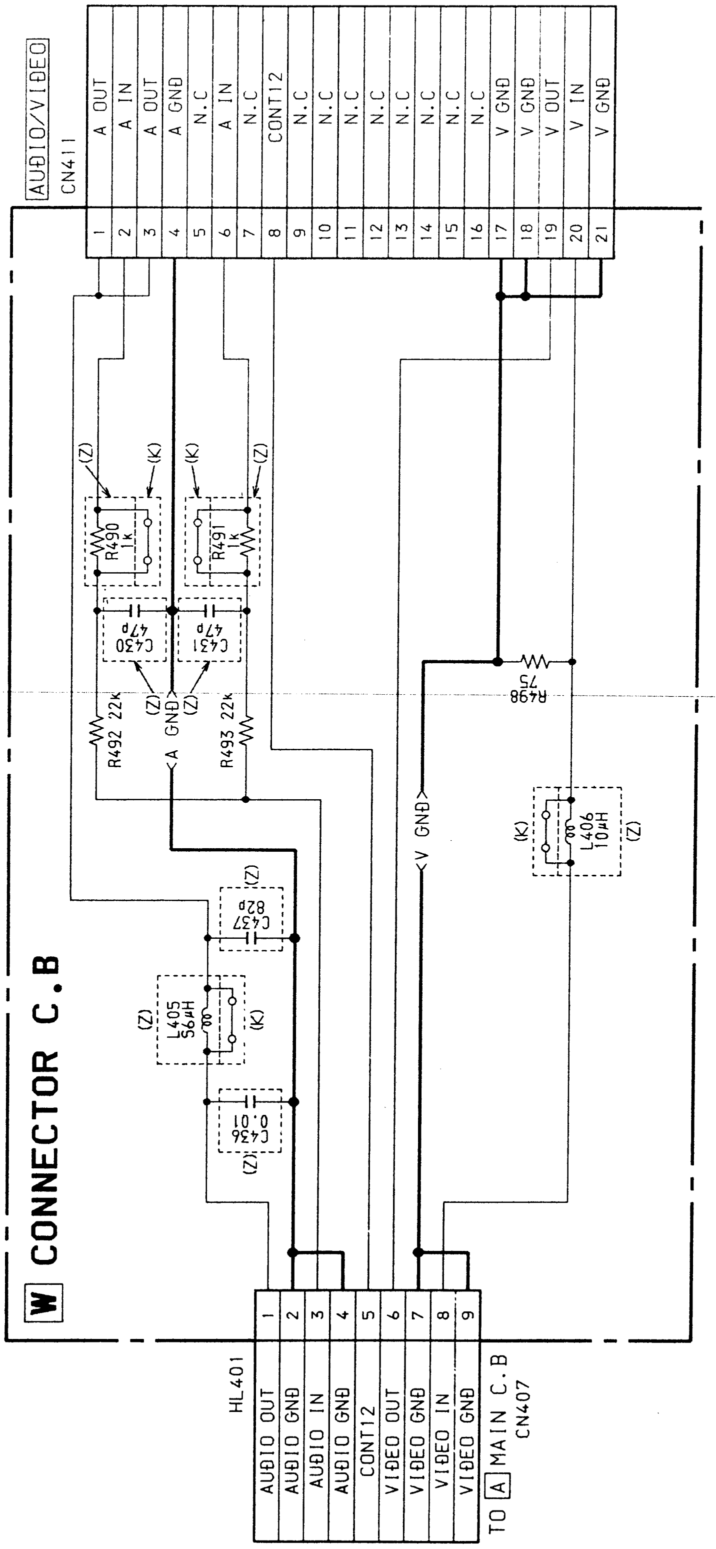


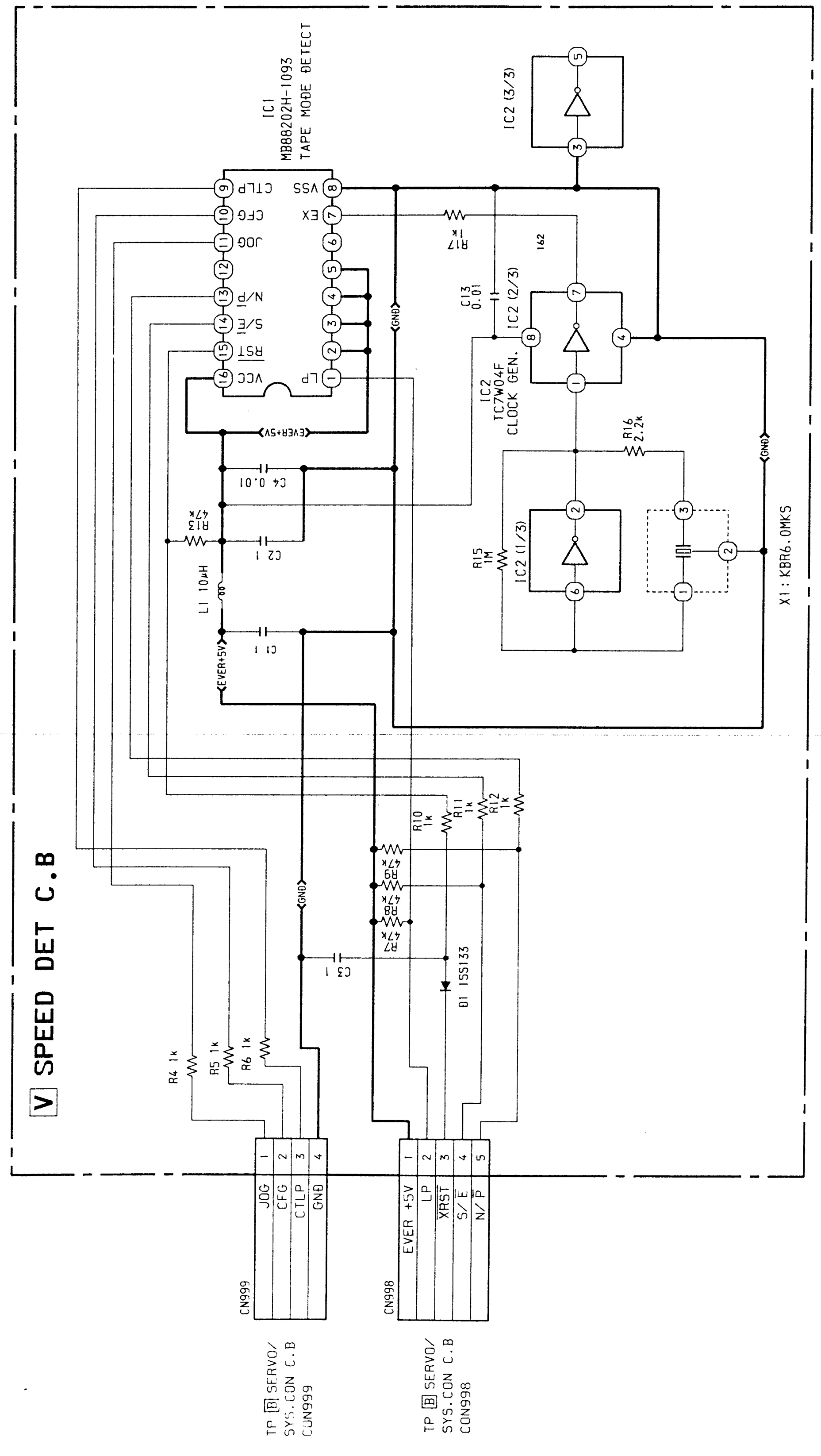
A MAIN C.B
F FRONT C.B
C HEAD AMP/AUDIO C.B
(AUDIO SECTION)
AUDIO OUTPUT REAR OUT TO W CONNECTOR C.B CN411 11 13 PIN
J402-2 AUDIO OUTPUT
J401-2 AUDIO INPUT
AUDIO INPUT LINE1 REAR IN
FRONT W CONNECTOR C.B CN411 26 PIN
(K, Z)
(DH, KE)
RFU
RF OUT
LINE2 FRONT IN
J901-1 AUDIO INPUT
TU AUDIO
IC781 NJM2234S
VH403 4PIN
VH403 3PIN
VH404 6PIN
VH404 5PIN
VH403 2PIN
VH404 4PIN
CN652 1PIN
CN652 4PIN
CN703 6PIN
CN703 5PIN
CN652 2PIN
CN703 4PIN
VH404 2PIN
CN703 2PIN
LINE AMP
REC MUTE
EE MUTE
PB MUTE
REC EQ AMP
P/N CONT
REC EQ
Q701
SW
PB EQ AMP
PB EQ
LP-EP SW
D703, Q703
IC 701 LA7297
LP-EP
REC/EE
P.B/EE
A MUTE
PAL/NTSC
REG 9V
T741, Q741
BIAS OSC
BT702
CN701
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO REC/PB HEAD
AUDIO PB
AUDIO REC
EE
REC
PB

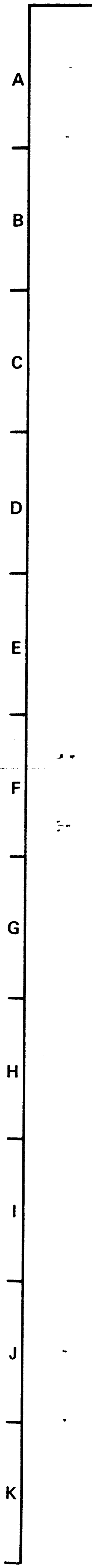


UNREG +18V
EVER +12V
DIG 5V
REG 5V
P ON
EVER +5V
POWER VOLTAGE ADJ
RV201
D201, D205, L201 +18V RECTIFIER BLOCK
D202, L202 +12V RECTIFIER BLOCK
D203, IC204 +5V REGULATOR BLOCK
D204, IC203 +5V REGULATOR BLOCK
VARIABLE VOLTAGE
IC201, C201, C202 R201~R203, R205
T101
PC101 ON3171R FEED BACK COUPLER
I POWER-2 C.B
H POWER-1 C.B
C105, C106 R102, D103
SNABA BLOCK
D101, C104 PRIMARY RECTIFIER BLOCK
R103, R104, C107 START UP BLOCK
HIC101 HB100 SWITCHING DRIVER
Q101
C101, L101 LINE FILTER BLOCK
PRIMARY GND
J101 AC INLET AC110-240V 50/60HZ

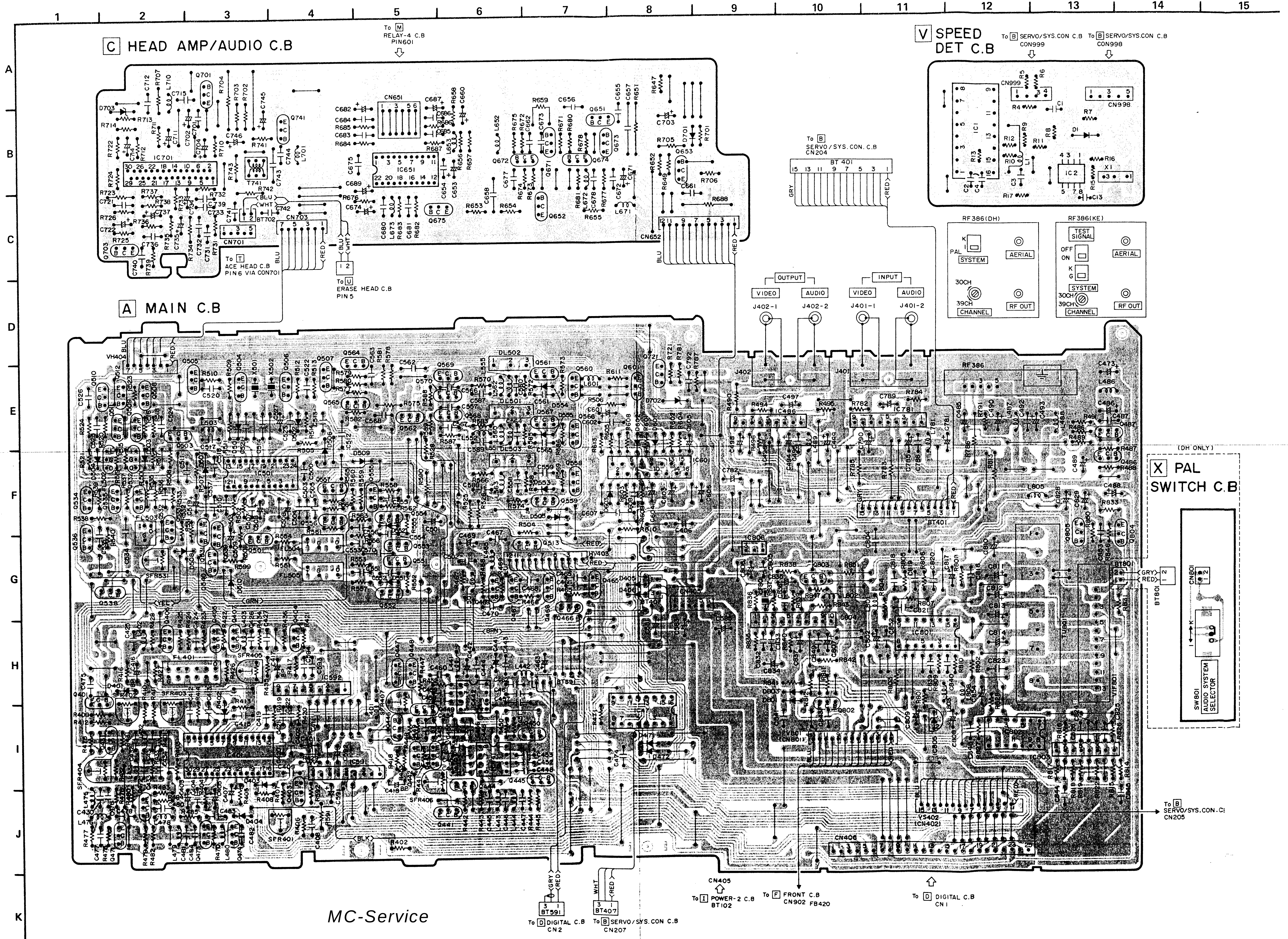
SCHEMATIC DIAGRAM – 1 (CONNECTOR SECTION) MG350K, Z


AUDIO/VIDEO
CN411
1 A OUT
2 A IN
3 A OUT
4 A GND
5 N.C
6 A IN
7 N.C
8 CONT12
9 N.C
10 N.C
11 N.C
12 N.C
13 N.C
14 N.C
15 N.C
16 N.C
17 V GND
18 V GND
19 V OUT
20 V IN
21 V GND
(Z)
(K)
R490 1k
R491 1k
C430 47p
C431 47p
R492 22k
R493 22k
A GND
R498 75
V GND
L406 10µH
C437 82p
L405 56µH
C436 0.01
W CONNECTOR C.B
HL401
1 AUDIO OUT
2 AUDIO GND
3 AUDIO IN
4 AUDIO GND
5 CONT12
6 VIDEO OUT
7 VIDEO GND
8 VIDEO IN
9 VIDEO GND
TO A MAIN C.B
CN407


V SPEED DET C.B
IC1
MB88202H-1093
TAPE MODE DETECT
CTLP
CFG
JOG
N/P
S/E
RST
VCC
VSS
EX
LP
IC2 (3/3)
IC2 (2/3)
IC2 (1/3)
IC2
TC7W04F
CLOCK GEN.
R17 1k
C13 0.01
R16 2.2k
R15 1M
X1 : KBR6.0MKS
C4 0.01
R13 47k
C2 1
L1 10μH
C1 1
EVER+5V
GND
R10 1k
R11 1k
R12 1k
R9 47k
R8 47k
R7 47k
C3 1
D1 1SS133
R4 1k
R5 1k
R6 1k
JOG
CFG
CTLP
GND
EVER +5V
LP
XRST
S/E
N/P
CN999
CN998
TP B SERVO/
SYS.CON C.B
CON999
TP B SERVO/
SYS.CON C.B
CON998

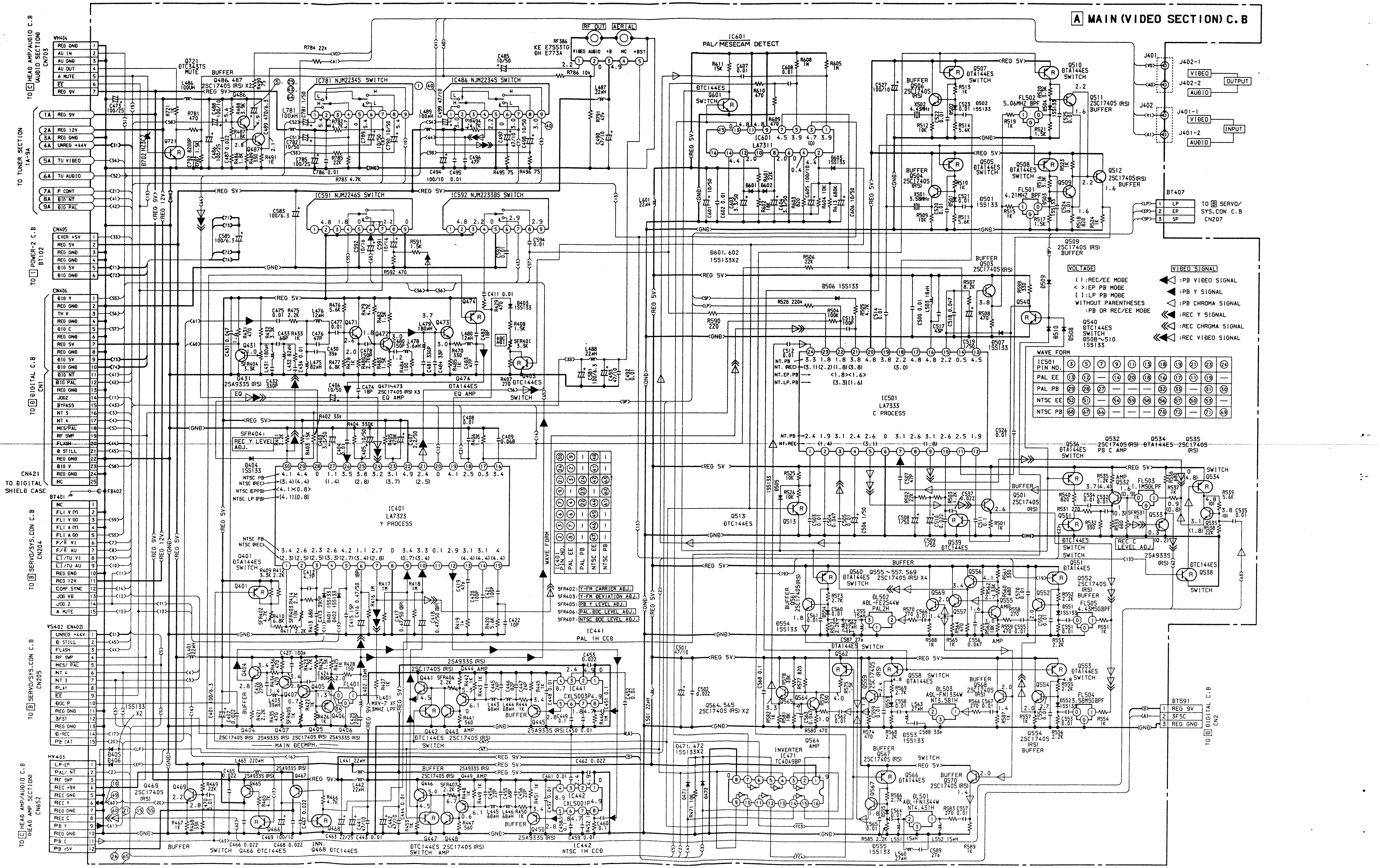

A
B
C
D
E
F
G
H
I
J
K

WIRING – 1 (VIDEO/TUNER/AUDIO SECTION) MG330KE, DH



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J K
C HEAD AMP/AUDIO C.B
To M RELAY-4 C.B PIN601
V SPEED DET C.B
To B SERVO/SYS.CON C.B CON999
To B SERVO/SYS.CON C.B CON998
To B SERVO/SYS.CON C.B CN204
BT401
IC701
IC651
CN651
CN703
CN701
CN652
IC1
IC2
CN999
CN998
To T ACE HEAD C.B PIN6 VIA CON701
To U ERASE HEAD C.B PIN5
BLU
WHT
RED
GRY
RF386(DH)
RF386(KE)
SYSTEM
AERIAL
CHANNEL
RF OUT
TEST SIGNAL
OFF
ON
PAL
30CH
39CH
OUTPUT
INPUT
VIDEO
AUDIO
J402-1
J402-2
J401-1
J401-2
A MAIN C.B
J402
J401
RF386
(DH ONLY)
X PAL SWITCH C.B
SW801 AUDIO SYSTEM SELECTOR
CN801
BT801
TU801
IC801
IC804
IC601
IC486
IC781
IC501
IC591
IC592
DL501
DL502
DL503
FL401
FL503
FL504
FL505
VS402 (CN402)
CN406
BT591
BT407
To D DIGITAL C.B CN2
To B SERVO/SYS.CON C.B CN207
CN405
To I POWER-2 C.B BT102
To F FRONT C.B CN902 FB420
To D DIGITAL C.B CN1
To B SERVO/SYS.CON.C.B CN205

SCHEMATIC DIAGRAM – 3 (VIDEO SECTION) MG330KE, DH


A MAIN (VIDEO SECTION) C.B
TO C HEAD AMP/AUDIO C.B (AUDIO SECTION) CN703
TO TUNER SECTION 1A-9A
TO I POWER-2 C.B BT102
TO D DIGITAL C.B CN1
CN421 TO DIGITAL SHIELD CASE
TO B SERVO/SYS.CON C.B CN204
TO B SERVO/SYS.CON C.B CN205
TO C HEAD AMP/AUDIO C.B (HEAD AMP SECTION) CN652
TO B SERVO/SYS.CON C.B CN207
TO D DIGITAL C.B CN2
RF OUT
AERIAL
IC601 PAL/MESECAM DETECT
IC601 LA7311
IC781 NJM2234S SWITCH
IC486 NJM2234S SWITCH
IC591 NJM2246S SWITCH
IC592 NJM2233BS SWITCH
IC401 LA7323 Y PROCESS
IC501 LA7333 C PROCESS
IC441 CXL5003P PAL 1H CCD
IC442 CXL5001P NTSC 1H CCD
IC471 TC4049BP INVERTER
J401
J402
VIDEO
AUDIO
OUTPUT
INPUT
SFR404: REC Y LEVEL ADJ.
REC C LEVEL ADJ.
MAIN DEEMPH.
EQ AMP
PB C AMP

VOLTAGE

( ) :REC/EE MODE
< >:EP PB MODE
[ ]:LP PB MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE

VIDEO SIGNAL

◀◁ :PB VIDEO SIGNAL
◀ :PB Y SIGNAL
◁ :PB CHROMA SIGNAL
«◀ :REC Y SIGNAL
«◁ :REC CHROMA SIGNAL
«◀◁ :REC VIDEO SIGNAL

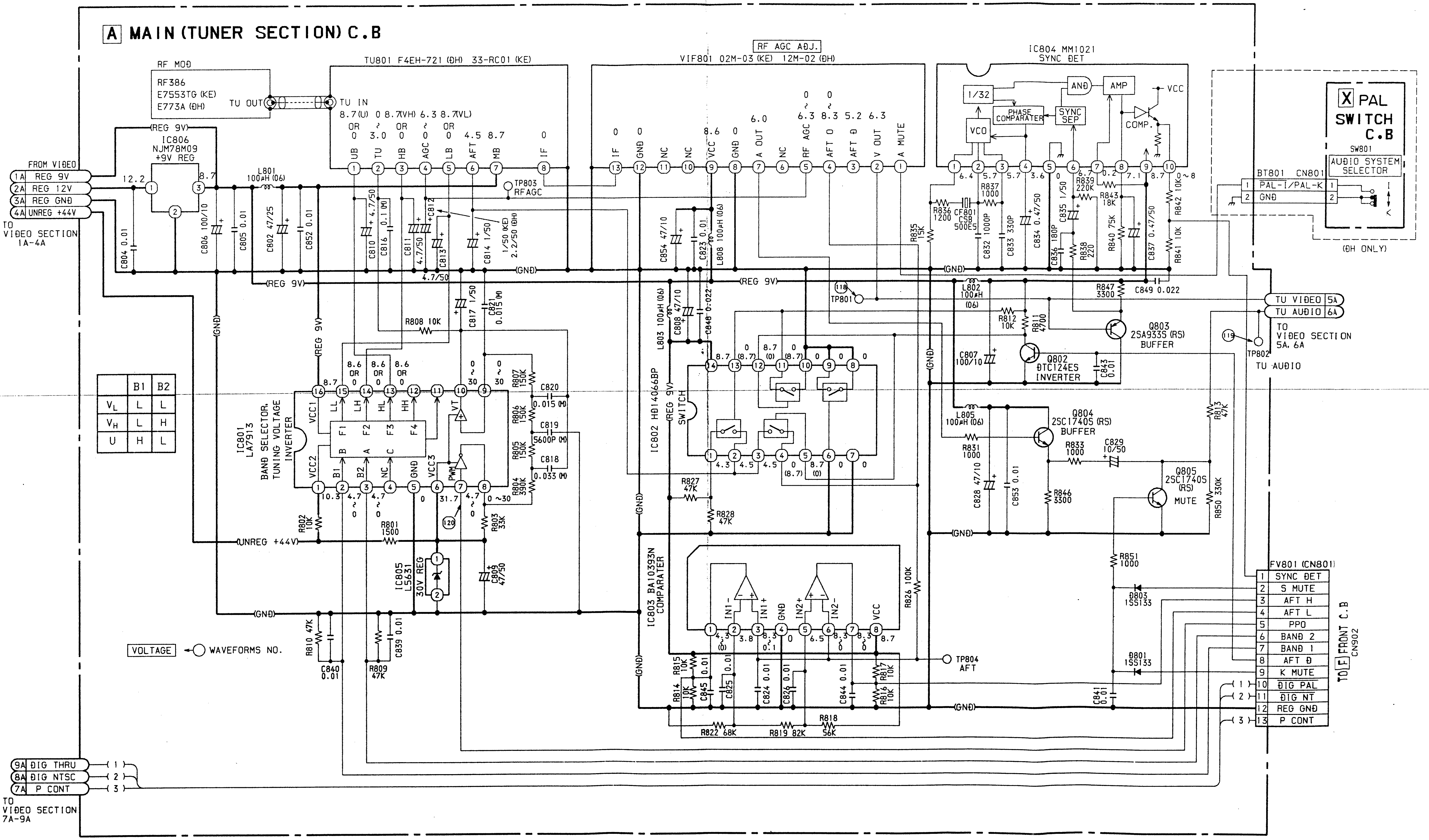
WAVE FORM

IC501 PIN NO.	③	⑤	⑦	⑨	⑪	⑬	⑱	⑲	㉑	㉓	㉔
PAL EE	⑬	⑫	—	⑭	⑳	⑱	⑯	⑰	⑪	⑲	—
PAL PB	㉙	㉘	㉗	—	—	—	㉜	㉝	—	㉛	㉚
NTSC EE	(52)	(51)	—	(54)	(59)	(58)	(56)	(57)	㊿	(53)	—
NTSC PB	(68)	(67)	(66)	—	—	—	(70)	(72)	—	(71)	(69)

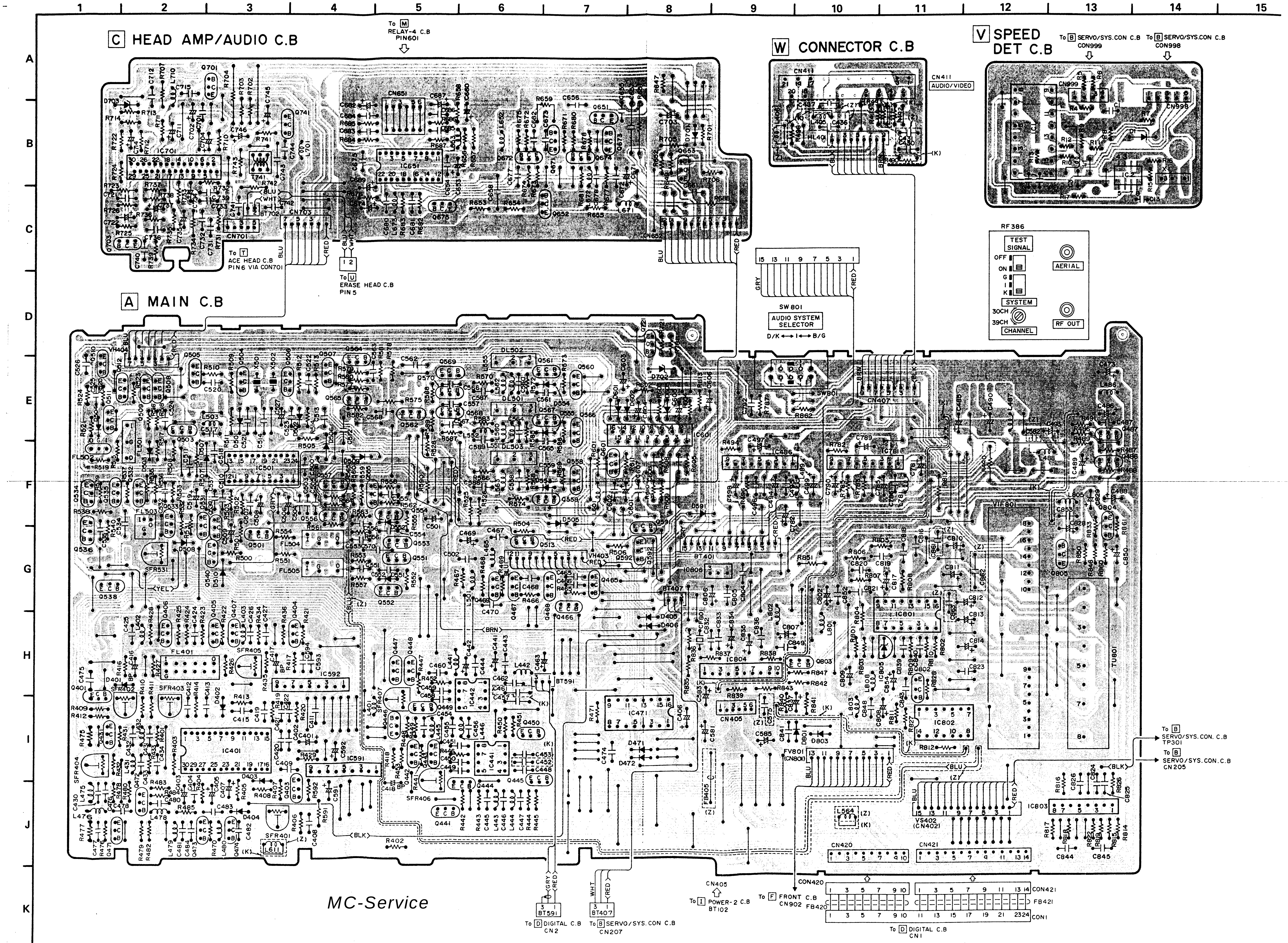
WAVE FORM

IC401 PIN NO.	②	③	⑥	⑦	⑨	㉑	㉔	㉚
PAL EE	⑧	⑦	⑥	④	—	③	②	⑨
PAL PB	—	—	—	㉒	㉓	㉔	—	—
NTSC EE	㊼	㊻	㊺	㊹	—	㊷	㊶	㊽
NTSC PB	—	—	—	(61)	(62)	(63)	—	—

SFR402: Y-FM CARRIER ADJ.
SFR403: Y-FM DEVIATION ADJ.
SFR405: PB Y LEVEL ADJ.
SFR406: PAL.DOC LEVEL ADJ.
SFR407: NTSC DOC LEVEL ADJ.


A MAIN (TUNER SECTION) C.B
RF MOD
RF386
E7553TG (KE)
E773A (DH)
TU OUT
TU801 F4EH-721 (DH) 33-RC01 (KE)
TU IN
RF AGC ADJ.
VIF801 02M-03 (KE) 12M-02 (DH)
IC804 MM1021
SYNC DET
1/32
VCO
PHASE COMPARATER
SYNC SEP
AND
AMP
VCC
COMP.
X PAL SWITCH C.B
SW801
AUDIO SYSTEM SELECTOR
BT801 CN801
PAL-I/PAL-K
GND
(DH ONLY)
FROM VIDEO
1A REG 9V
2A REG 12V
3A REG GND
4A UNREG +44V
TO VIDEO SECTION 1A-4A
IC806
NJM78M09
+9V REG
L801 100μH (06)
TP803 RFAGC
REG 9V
GND
UNREG +44V
IC801 LA7913
BAND SELECTOR, TUNING VOLTAGE INVERTER
IC805 L5631 30V REG
IC802 HD14066BP
SWITCH
IC803 BA10393N COMPARATER
TP801
TP802
TP804 AFT
TU VIDEO 5A
TU AUDIO 6A
TO VIDEO SECTION 5A, 6A
TU AUDIO
Q803 2SA933S (RS) BUFFER
Q802 DTC124ES INVERTER
Q804 2SC1740S (RS) BUFFER
Q805 2SC1740S (RS) MUTE
D803 1SS133
D801 1SS133
FV801 (CN801)
1 SYNC DET
2 S MUTE
3 AFT H
4 AFT L
5 PPO
6 BAND 2
7 BAND 1
8 AFT D
9 K MUTE
10 DIG PAL
11 DIG NT
12 REG GND
13 P CONT
TO F FRONT C.B CN902
9A DIG THRU
8A DIG NTSC
7A P CONT
TO VIDEO SECTION 7A-9A
B1 B2
VL L L
VH L H
U H L
VOLTAGE
WAVEFORMS NO.

WIRING – 2 (VIDEO/TUNER/AUDIO SECTION) MG350K, Z


C HEAD AMP/AUDIO C.B
To M RELAY-4 C.B PIN601
W CONNECTOR C.B
CN411 AUDIO/VIDEO
V SPEED DET C.B
To B SERVO/SYS.CON C.B CON999
To B SERVO/SYS.CON C.B CON998
To T ACE HEAD C.B PIN6 VIA CON701
To U ERASE HEAD C.B PIN5
RF386
TEST SIGNAL
OFF
ON
AERIAL
G
I
K
SYSTEM
30CH
39CH
CHANNEL
RF OUT
SW801
AUDIO SYSTEM SELECTOR
D/K ←→ I ←→ B/G
A MAIN C.B
To B SERVO/SYS.CON. C.B TP301
To B SERVO/SYS.CON. C.B CN205
CN420
CN421
CON420
CON421
FB420
FB421
CON1
To D DIGITAL C.B CN2
To B SERVO/SYS.CON C.B CN207
CN405
To I POWER-2 C.B BT102
To F FRONT C.B CN902
To D DIGITAL C.B CN1
MC-Service
A
B
C
D
E
F
G
H
I
J
K
1
2
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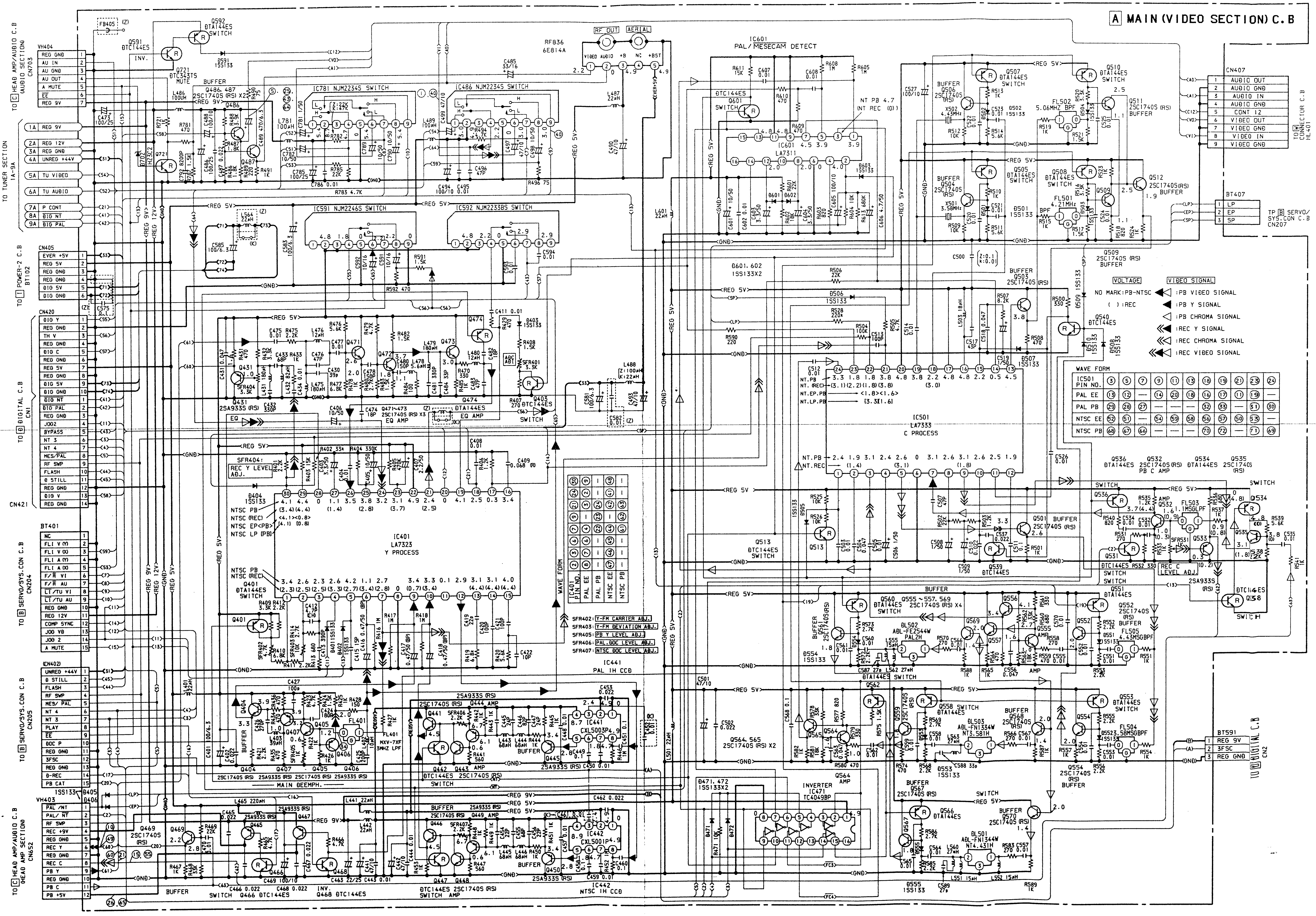
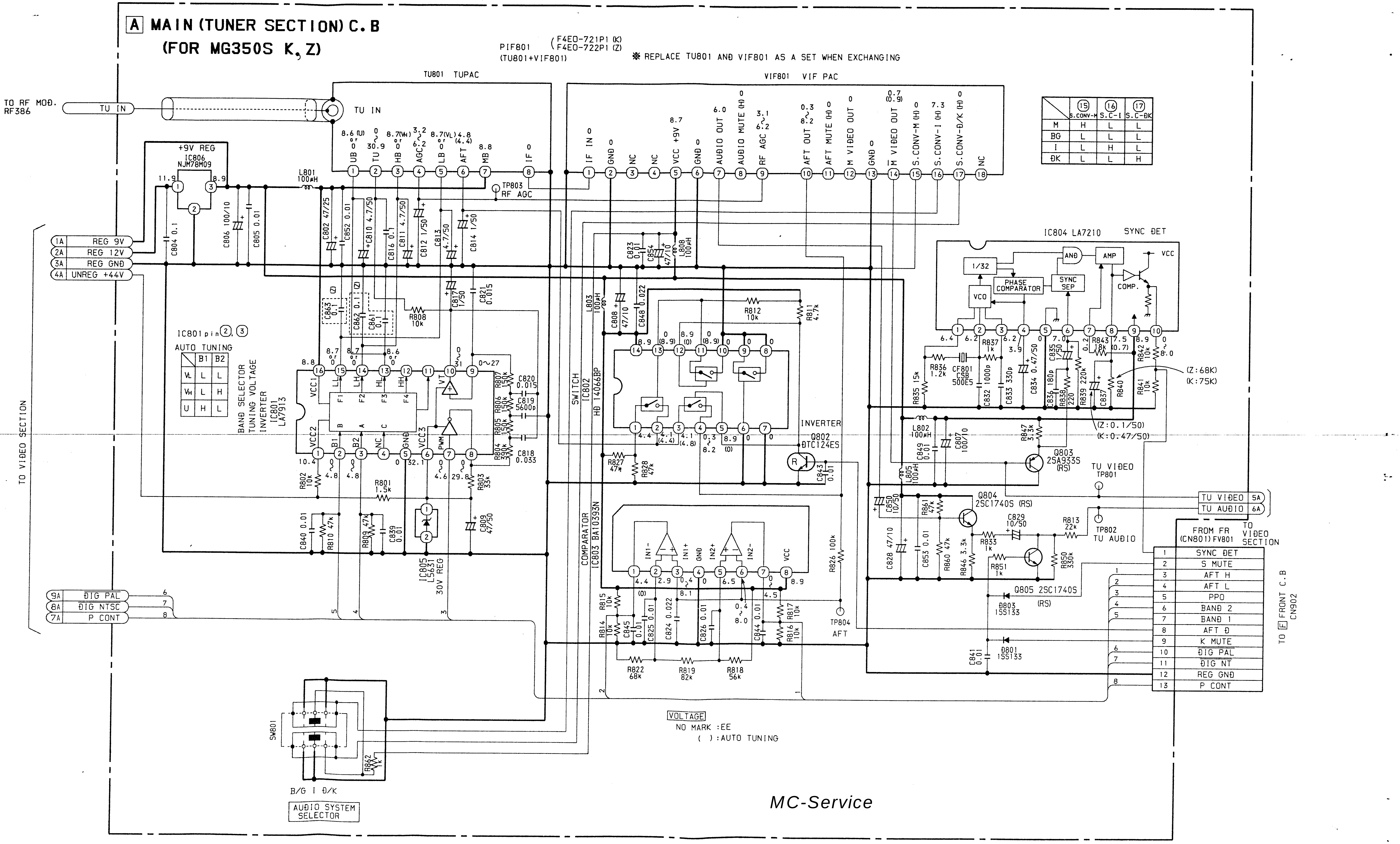
15

SCHEMATIC DIAGRAM – 5 (VIDEO SECTION) MG350K, Z


A MAIN (VIDEO SECTION) C.B
TO C HEAD AMP/AUDIO C.B (AUDIO SECTION) CN703
TO TUNER SECTION 1A-9A
TO 1 POWER-2 C.B BT102
TO D DIGITAL C.B CN1
TO B SERVO/SYS.CON C.B CN204
TO B SERVO/SYS.CON C.B CN205
TO C HEAD AMP/AUDIO C.B (HEAD AMP SECTION) CN652
TO W CONNECTOR C.B HL401
TP B SERVO/SYS.CON C.B CN207
TO D DIGITAL C.B CN2
RF OUT
AERIAL
RF836 6E814A
IC601 PAL/MESECAM DETECT
IC601 LA7311
IC781 NJM2234S SWITCH
IC486 NJM2234S SWITCH
IC591 NJM2246S SWITCH
IC592 NJM2233BS SWITCH
IC401 LA7323 Y PROCESS
IC501 LA7333 C PROCESS
IC441 PAL 1H CCD
IC442 NTSC 1H CCD
IC471 TC4049BP INVERTER
SFR402: Y-FM CARRIER ADJ.
SFR403: Y-FM DEVIATION ADJ.
SFR405: PB Y LEVEL ADJ.
SFR406: PAL.DOC LEVEL ADJ.
SFR407: NTSC DOC LEVEL ADJ.
SFR404: REC Y LEVEL ADJ.
REC C LEVEL ADJ.
VOLTAGE
NO MARK: PB-NTSC
( ): REC
VIDEO SIGNAL
:PB VIDEO SIGNAL
:PB Y SIGNAL
:PB CHROMA SIGNAL
:REC Y SIGNAL
:REC CHROMA SIGNAL
:REC VIDEO SIGNAL
WAVE FORM
IC501 PIN NO. ③ ⑤ ⑦ ⑨ ⑪ ⑬ ⑱ ⑲ ㉑ ㉓ ㉔
PAL EE ⑬ ⑫ — ⑭ ⑳ ⑱ ⑯ ⑰ ⑪ ⑲ —
PAL PB ㉙ ㉘ ㉗ — — — ㉜ ㉝ — ㉛ ㉚
NTSC EE (52) (51) — (54) (59) (58) (56) (57) (50) (53) —
NTSC PB (68) (67) (66) — — — (70) (72) — (71) (69)
MAIN DEEMPH.
EQ AMP
BUFFER
SWITCH

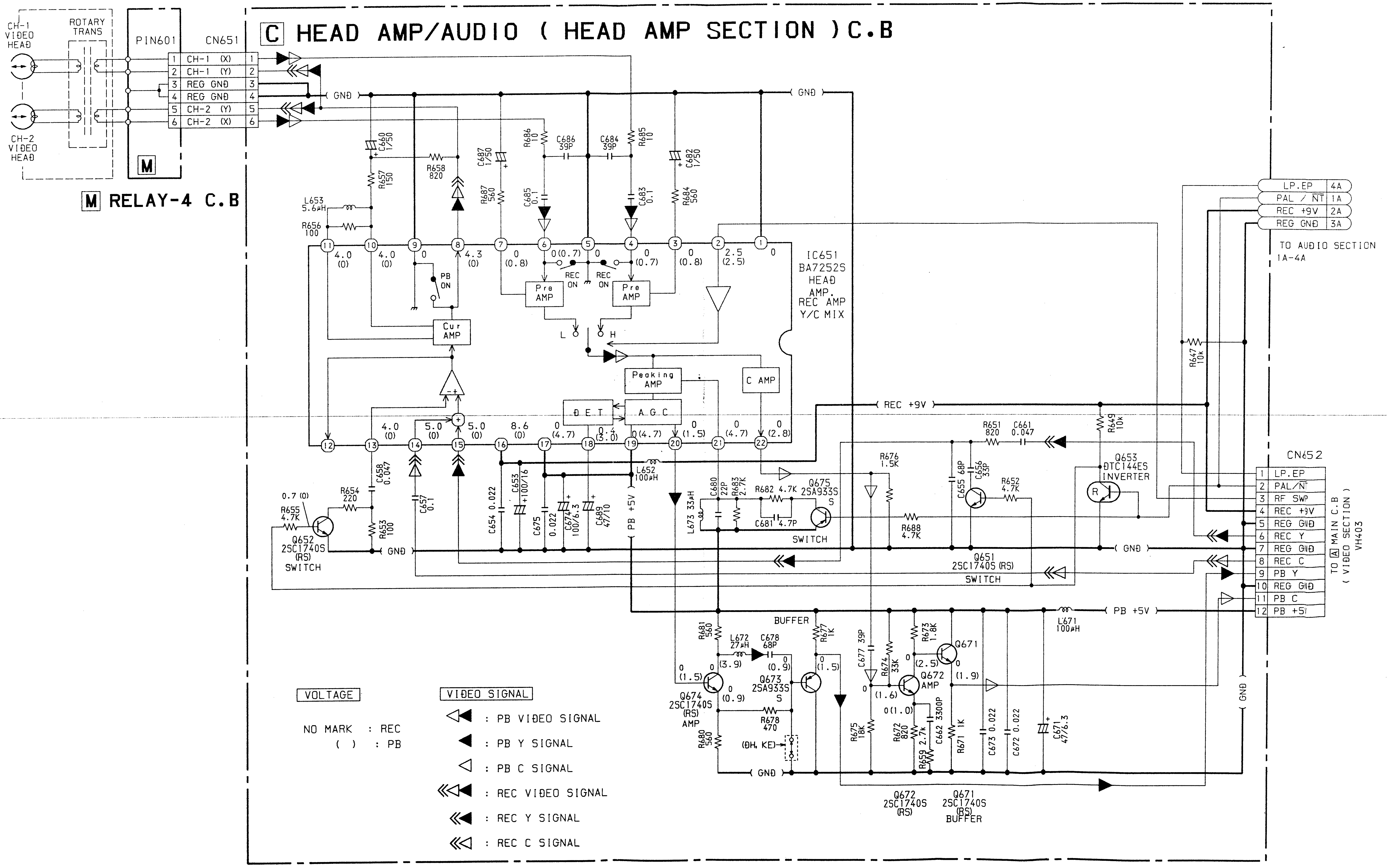
MC-Service

SCHEMATIC DIAGRAM – 6 (TUNER SECTION) MG350K, Z

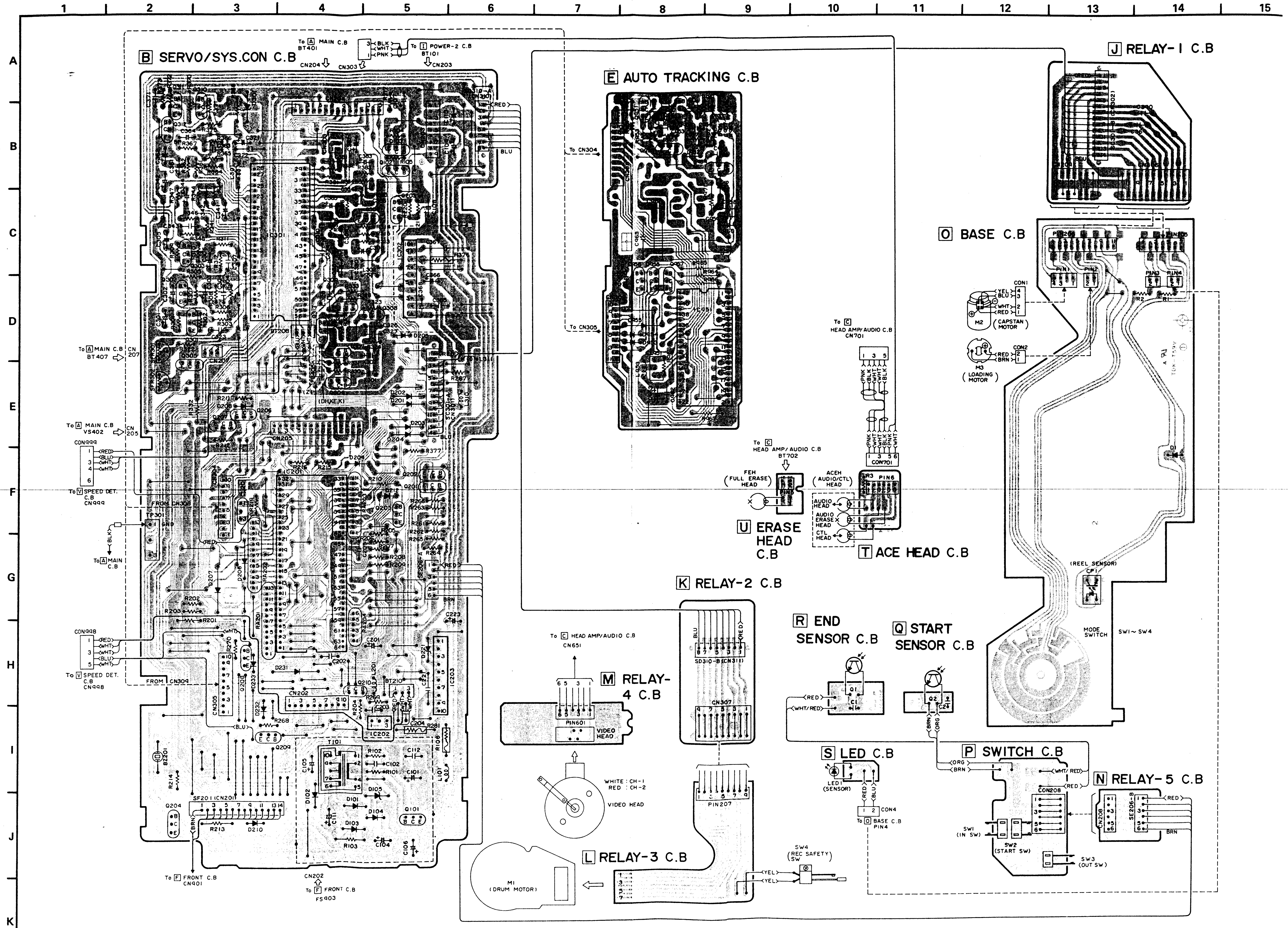


A MAIN (TUNER SECTION) C.B
(FOR MG350S K, Z)
PIF801 (F4E0-721P1 (K) F4E0-722P1 (Z) (TU801+VIF801)
※ REPLACE TU801 AND VIF801 AS A SET WHEN EXCHANGING
TU801 TUPAC
VIF801 VIF PAC
TO RF MOD. RF386
TU IN
+9V REG IC806 NJM78M09
UB TU HB AGC LB AFT MB IF
IF IN GND NC NC VCC +9V GND AUDIO OUT AUDIO MUTE (H) RF AGC AFT OUT AFT MUTE (H) M VIDEO OUT GND M VIDEO OUT S.CONV-M (H) S.CONV-I (H) S.CONV-D/K (H) NC
TP803 RF AGC
L801 100μH
1A REG 9V
2A REG 12V
3A REG GND
4A UNREG +44V
9A DIG PAL
8A DIG NTSC
7A P CONT
TO VIDEO SECTION
IC801 pin 2, 3
AUTO TUNING
	B1	B2
VL	L	L
VH	L	H
U	H	L
BAND SELECTOR TUNING VOLTAGE INVERTER IC801 LA7913
IC805 L5631 30V REG
SWITCH IC802 HD14066BP
COMPARATOR IC803 BA10393N
INVERTER Q802 DTC124ES
IC804 LA7210 SYNC DET
1/32 PHASE COMPARATOR SYNC SEP VCO AND AMP COMP. VCC
	15 S.CONV-M	16 S.C-I	17 S.C-DK
M	H	L	L
BG	L	L	L
I	L	H	L
DK	L	L	H
(Z:68K) (K:75K)
(Z:0.1/50) (K:0.47/50)
Q803 2SA933S (RS)
Q804 2SC1740S (RS)
Q805 2SC1740S (RS)
D801 1SS133
D803 1SS133
TU VIDEO TP801
TP802 TU AUDIO
TP804 AFT
TU VIDEO 5A
TU AUDIO 6A
FROM FR (CN801) FV801
TO VIDEO SECTION
1 SYNC DET
2 S MUTE
3 AFT H
4 AFT L
5 PPO
6 BAND 2
7 BAND 1
8 AFT D
9 K MUTE
10 DIG PAL
11 DIG NT
12 REG GND
13 P CONT
TO F FRONT C.B CN902
SW801
B/G I D/K
AUDIO SYSTEM SELECTOR
VOLTAGE
NO MARK :EE
( ) :AUTO TUNING
MC-Service

SCHEMATIC DIAGRAM – 7 (HEAD AMP SECTION)


C HEAD AMP/AUDIO (HEAD AMP SECTION) C.B
M RELAY-4 C.B
CH-1 VIDEO HEAD
CH-2 VIDEO HEAD
ROTARY TRANS
PIN601
CN651
1 CH-1 (X)
2 CH-1 (Y)
3 REG GND
4 REG GND
5 CH-2 (Y)
6 CH-2 (X)
GND
IC651 BA7252S HEAD AMP, REC AMP Y/C MIX
Pre AMP
Cur AMP
Peaking AMP
C AMP
DET
AGC
REC ON
PB ON
L
H
LP.EP 4A
PAL / NT 1A
REC +9V 2A
REG GND 3A
TO AUDIO SECTION 1A-4A
REC +9V
PB +5V
CN652
1 LP.EP
2 PAL/NT
3 RF SWP
4 REC +9V
5 REG GND
6 REC Y
7 REG GND
8 REC C
9 PB Y
10 REG GND
11 PB C
12 PB +5V
TO A MAIN C.B (VIDEO SECTION) VH403
Q652 2SC1740S (RS) SWITCH
Q675 2SA933S SWITCH
Q651 2SC1740S (RS) SWITCH
Q653 DTC144ES INVERTER
Q674 2SC1740S (RS) AMP
Q673 2SA933S BUFFER
Q672 2SC1740S (RS) AMP
Q671 2SC1740S (RS) BUFFER
L653 5.6µH
L652 100µH
L673 33µH
L672 27µH
L671 100µH
R656 100
R657 150
R658 820
R687 560
R686 10
R685 10
R684 560
R654 220
R655 4.7K
R653 100
R682 4.7K
R683 2.7K
R676 1.5K
R688 4.7K
R651 820
R652 4.7K
R647 10K
R649 10K
R681 560
R680 560
R678 470
R677 1K
R673 1.8K
R674 33K
R675 18K
R672 820
R659 2.7k
R671 1K
C660 1/50
C687 1/50
C686 39P
C684 39P
C682 1/50
C685 0.1
C683 0.1
C658 0.047
C657 0.1
C654 0.022
C653 100/16
C675 0.022
C674 100/6.3
C689 47/10
C680 22P
C681 4.7P
C655 68P
C656 33P
C661 0.047
C678 68P
C677 39P
C662 3300P
C673 0.022
C672 0.022
C671 47/6.3
(DH, KE)
VOLTAGE
NO MARK : REC
( ) : PB
VIDEO SIGNAL
: PB VIDEO SIGNAL
: PB Y SIGNAL
: PB C SIGNAL
: REC VIDEO SIGNAL
: REC Y SIGNAL
: REC C SIGNAL

WIRING – 3 (SERVO/SYSTEM CONTROL/AUTO TRACKING/MECHANISM SECTION)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
B SERVO/SYS.CON C.B
To A MAIN C.B BT401
CN204
CN303
To I POWER-2 C.B BT101
CN203
E AUTO TRACKING C.B
J RELAY-1 C.B
O BASE C.B
To CN304
To CN305
To A MAIN C.B BT407 CN207
To A MAIN C.B VS402 CN205
CON999
To V SPEED DET. C.B CN999
FROM CN308
TP301
GND
To A MAIN C.B
CON998
To V SPEED DET. C.B CN998
FROM CN309
CN305
CN202
SF201 (CN201)
BZ201
Q204
To F FRONT C.B CN901
CN202 To F FRONT C.B FS903
CON1
M2 (CAPSTAN MOTOR)
CON2
M3 (LOADING MOTOR)
To C HEAD AMP/AUDIO C.B CN701
CON701
To C HEAD AMP/AUDIO C.B BT702
FEH (FULL ERASE) HEAD
ACEH (AUDIO/CTL) HEAD
AUDIO HEAD
AUDIO ERASE HEAD
CTL HEAD
PIN6
U ERASE HEAD C.B
T ACE HEAD C.B
K RELAY-2 C.B
SD310-B (CN318)
CN307
PIN207
R END SENSOR C.B
Q START SENSOR C.B
(REEL SENSOR) CP1
MODE SWITCH
SW1 ~ SW4
To C HEAD AMP/AUDIO C.B CN651
M RELAY-4 C.B
PIN601
VIDEO HEAD
WHITE : CH-1
RED : CH-2
VIDEO HEAD
S LED C.B
LED1 (SENSOR)
CON4
To O BASE C.B PIN4
P SWITCH C.B
CON208
SW1 (IN SW)
SW2 (START SW)
SW3 (OUT SW)
N RELAY-5 C.B
CN208
SE206-B
L RELAY-3 C.B
M1 (DRUM MOTOR)
SW4 (REC SAFETY) SW
T101
IC202
IC201
IC301
IC302
Q101
RED
BLU
WHT
BRN
YEL
PNK
BLK
ORG

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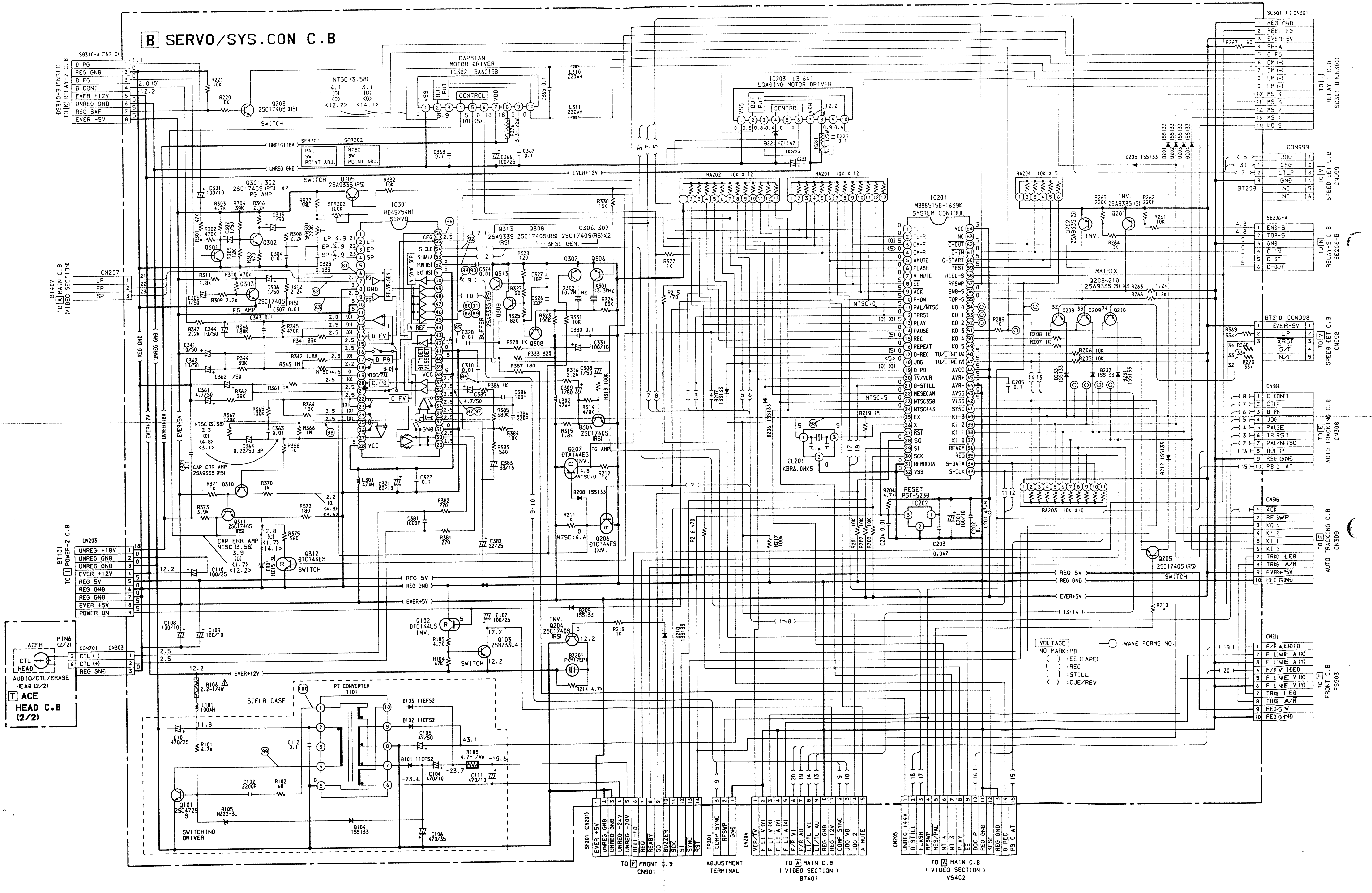
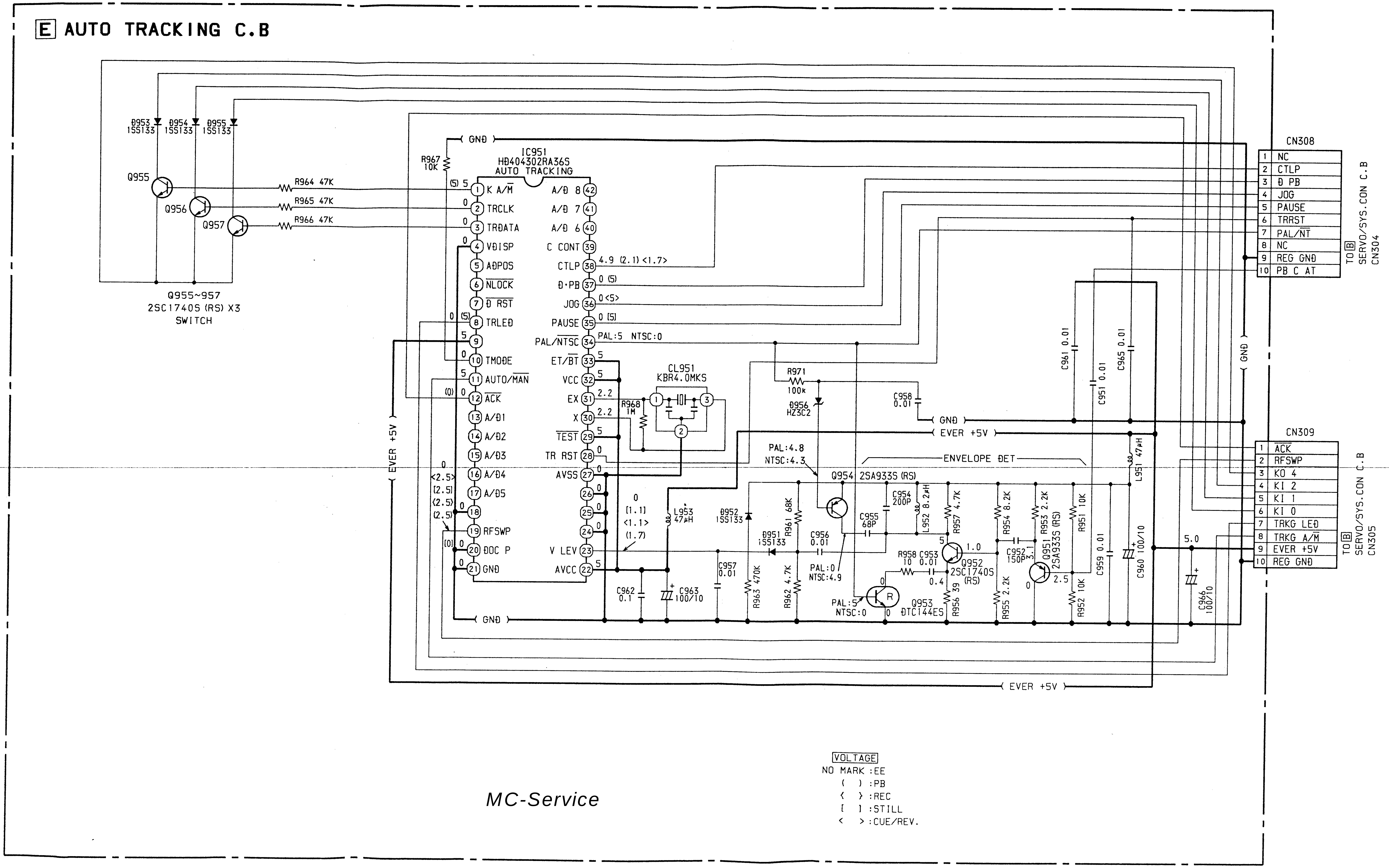
SCHEMATIC DIAGRAM – 8 (SERVO/SYSTEM/CONTROL SECTION)

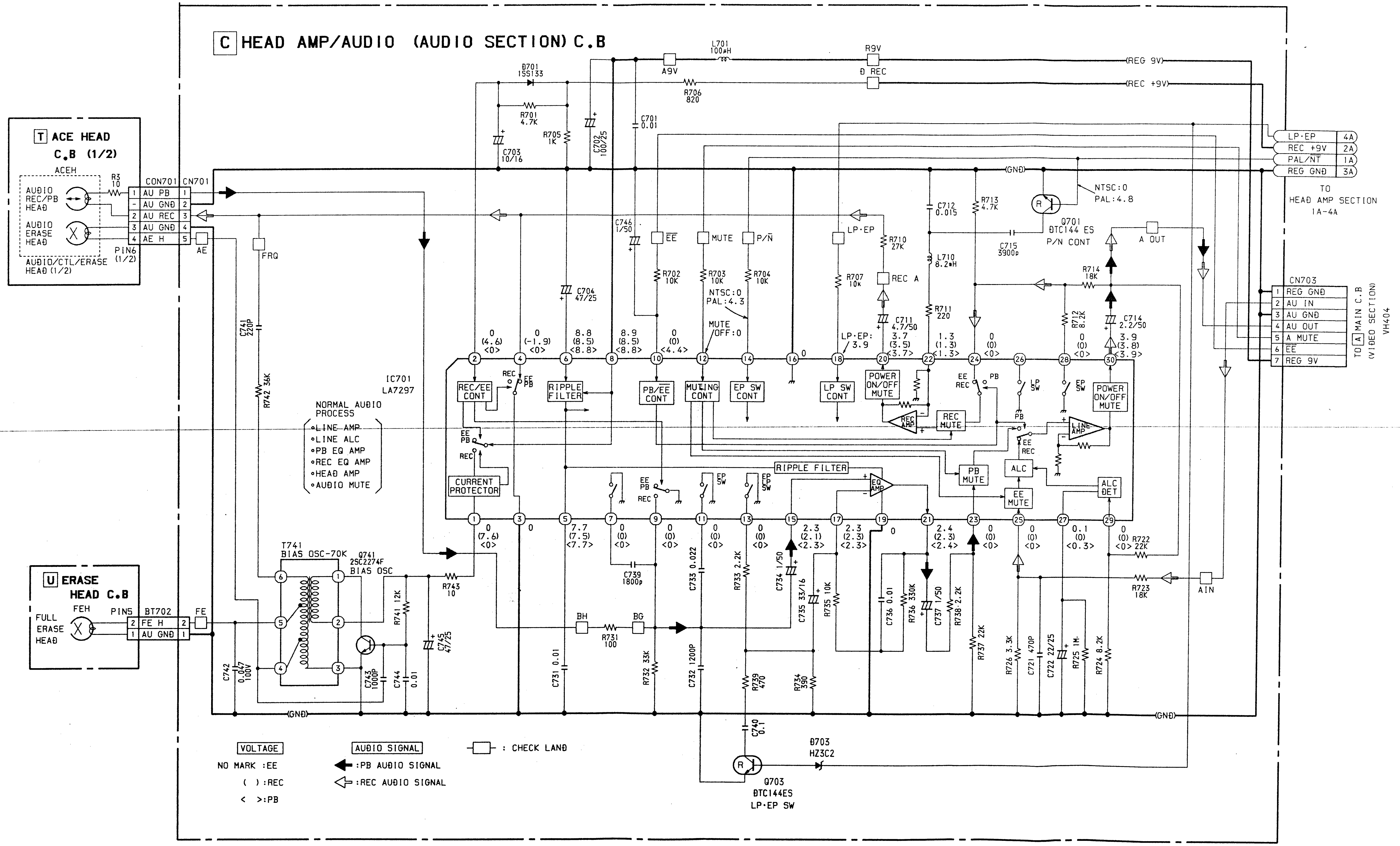

B SERVO/SYS.CON C.B
CAPSTAN MOTOR DRIVER IC302 BA6219B
IC203 LB1641 LOADING MOTOR DRIVER
IC301 HB49754NT SERVO
IC201 MB88515B-1639K SYSTEM CONTROL
IC202 PST-5230 RESET
CL201 KBR6.0MKS
Q203 2SC1740S (RS) SWITCH
Q301, 302 2SC1740S (RS) X2 PG AMP
Q305 2SA933S (RS) SWITCH
Q303 2SC1740S (RS) FG AMP
Q310, Q311 2SA933S (RS) 2SC1740S (RS) CAP ERR AMP
Q312 DTC144ES SWITCH
Q313 2SA933S (RS)
Q308 2SC1740S (RS)
Q306, 307 2SC1740S (RS) X2 3FSC GEN.
Q304 2SC1740S (RS)
Q207 DTA144ES INV.
Q206 DTC144ES INV.
Q201 2SA933S (S)
Q202 2SA933S (S) INV.
Q208~210 2SA933S (S) X3
Q205 2SC1740S (RS) SWITCH
Q102 DTC144ES INV.
Q103 2SB733U4 SWITCH
Q204 2SC1740S (RS) INV.
BZ201 PKM17EP1
Q101 2SC4729 S SWITCHING DRIVER
PT CONVERTER T101
SIELD CASE
SFR301 PAL SW POINT ADJ.
SFR302 NTSC SW POINT ADJ.
RA202 10K X 12
RA201 10K X 12
RA204 10K X 5
RA203 10K X10
MATRIX
SD310-B (CN311) TO K RELAY-2 C.B
BT407 TO A MAIN C.B (VIDEO SECTION)
BT101 TO I POWER-2 C.B
T ACE HEAD C.B (2/2)
AUDIO/CTL/ERASE HEAD (2/2)
SC301-A (CN301)
TO J RELAY 1 C.B SC301-B (CN302)
CON999 TO V SPEED DET C.B CN999
SE206-A TO N RELAY-5 C.B SE206-B
BT210 CON998 TO V SPEED DET C.B CN998
CN304 TO E AUTO TRACKING C.B CN308
CN315 TO E AUTO TRACKING C.B CN309
CN212 TO F FRONT C.B FS903
SF201 (CN201) TO F FRONT C.B CN901
TP301 ADJUSTMENT TERMINAL
CN204 TO A MAIN C.B (VIDEO SECTION) BT401
CN205 TO A MAIN C.B (VIDEO SECTION) VS402
VOLTAGE
NO MARK : PB
( ) : EE (TAPE)
[ ] : REC
{ } : STILL
< > : CUE/REV
: WAVE FORMS NO.
UNREG+18V
UNREG GND
EVER+12V
REG 5V
REG GND
EVER+5V

SCHEMATIC DIAGRAM – 9 (AUTO TRACKING SECTION)


E AUTO TRACKING C.B
Đ953 1SS133
Đ954 1SS133
Đ955 1SS133
Q955
Q956
Q957
Q955~957
2SC1740S (RS) X3
SWITCH
R964 47K
R965 47K
R966 47K
GNĐ
R967 10K
IC951
HĐ404302RA36S
AUTO TRACKING
K A/M
TRCLK
TRĐATA
VĐISP
AĐPOS
NLOCK
Đ RST
TRLEĐ
TMOĐE
AUTO/MAN
ACK
A/Đ1
A/Đ2
A/Đ3
A/Đ4
A/Đ5
RFSWP
ĐOC P
GNĐ
A/Đ 8
A/Đ 7
A/Đ 6
C CONT
CTLP
Đ·PB
JOG
PAUSE
PAL/NTSC
ET/BT
VCC
EX
X
TEST
TR RST
AVSS
V LEV
AVCC
4.9 (2.1) <1.7>
0 (5)
0 <5>
0 (5)
PAL:5 NTSC:0
CL951
KBR4.0MKS
R968 1M
EVER +5V
R971 100k
Đ956 HZ3C2
C958 0.01
PAL:4.8
NTSC:4.3
Q954 2SA933S (RS)
ENVELOPE ĐET
C954 200P
C955 68P
L952 8.2μH
R957 4.7K
R954 8.2K
R953 2.2K
R951 10K
L951 47μH
L953 47μH
Đ952 1SS133
R961 68K
Đ951 1SS133
C956 0.01
R958 10
C953 0.01
Q952 2SC1740S (RS)
C952 150P
Q951 2SA933S (RS)
C959 0.01
C960 100/10
C962 0.1
C963 100/10
C957 0.01
R963 470K
R962 4.7K
PAL:0 NTSC:4.9
PAL:5 NTSC:0
Q953 ĐTC144ES
R956 39
R955 2.2K
R952 10K
C966 100/10
C961 0.01
C951 0.01
C965 0.01
5.0
CN308
1 NC
2 CTLP
3 Đ PB
4 JOG
5 PAUSE
6 TRRST
7 PAL/NT
8 NC
9 REG GNĐ
10 PB C AT
TO B SERVO/SYS.CON C.B CN304
CN309
1 ACK
2 RFSWP
3 KO 4
4 KI 2
5 KI 1
6 KI 0
7 TRKG LEĐ
8 TRKG A/M
9 EVER +5V
10 REG GNĐ
TO B SERVO/SYS.CON C.B CN305

VOLTAGE
NO MARK :EE
( ) :PB
⟨ ⟩ :REC
[ ] :STILL
< > :CUE/REV.

SCHEMATIC DIAGRAM – 10 (AUDIO SECTION)


C HEAD AMP/AUDIO (AUDIO SECTION) C.B
T ACE HEAD C.B (1/2)
ACEH
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
AUDIO/CTL/ERASE HEAD (1/2)
R3 10
PIN6 (1/2)
CON701
CN701
1 AU PB
- AU GND
2 AU REC
3 AU GND
4 AE H
AE
FRQ
U ERASE HEAD C.B
FULL ERASE HEAD
FEH
PIN5
BT702
2 FE H
1 AU GND
FE
D701 1SS133
R701 4.7K
C703 10/16
R705 1K
C702 100/25
C701 0.01
L701 100μH
A9V
R9V
D REC
R706 820
REG 9V
REC +9V
LP·EP 4A
REC +9V 2A
PAL/NT 1A
REG GND 3A
TO HEAD AMP SECTION 1A-4A
GND
C746 1/50
EE
MUTE
P/N
R702 10K
R703 10K
R704 10K
NTSC:0 PAL:4.3
MUTE /OFF:0
C704 47/25
LP·EP
R710 27K
R707 10K
REC A
C711 4.7/50
C712 0.015
L710 8.2mH
R711 220
R713 4.7K
Q701 DTC144 ES P/N CONT
NTSC:0 PAL:4.8
C715 3900p
A OUT
R714 18K
R712 8.2K
C714 2.2/50
CN703
1 REG GND
2 AU IN
3 AU GND
4 AU OUT
5 A MUTE
6 EE
7 REG 9V
TO A MAIN C.B (VIDEO SECTION) VH404
C741 220P
R742 36K
IC701 LA7297
NORMAL AUDIO PROCESS
•LINE AMP
•LINE ALC
•PB EQ AMP
•REC EQ AMP
•HEAD AMP
•AUDIO MUTE
REC/EE CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP SW CONT
LP SW CONT
POWER ON/OFF MUTE
REC AMP
REC MUTE
LINE AMP
ALC
ALC DET
PB MUTE
EE MUTE
EQ AMP
RIPPLE FILTER
CURRENT PROTECTOR
EE PB REC
LP SW
EP SW
0 (4.6) <0>
0 (-1.9) <0>
8.8 (8.5) <8.8>
8.9 (8.5) <8.8>
0 (0) <4.4>
LP·EP: /3.9
3.7 (3.5) <3.7>
1.3 (1.3) <1.3>
0 (0) <0>
0 (0) <0>
3.9 (3.8) <3.9>
0 (7.6) <0>
7.7 (7.5) <7.7>
0 (0) <0>
2.3 (2.1) <2.3>
2.3 (2.3) <2.3>
2.4 (2.3) <2.4>
0.1 (0) <0.3>
0 (0) <0>
R722 22K
R723 18K
AIN
T741 BIAS OSC-70K
Q741 2SC2274F BIAS OSC
R743 10
R741 12K
C745 47/25
C742 0.047 100V
C743 1000P
C744 0.01
C739 1800p
BH
BG
R731 100
C731 0.01
R732 33K
C732 1200P
C733 0.022
R733 2.2K
C734 1/50
C735 33/16
R735 10K
R739 470
R734 390
C736 0.01
R736 330K
C737 1/50
R738 2.2K
R737 22K
R726 3.3K
C721 470P
C722 22/25
R725 1M
R724 8.2K
C740 0.1
D703 HZ3C2
Q703 DTC144ES LP·EP SW
VOLTAGE
NO MARK :EE
( ) :REC
< >:PB
AUDIO SIGNAL
:PB AUDIO SIGNAL
:REC AUDIO SIGNAL
: CHECK LAND

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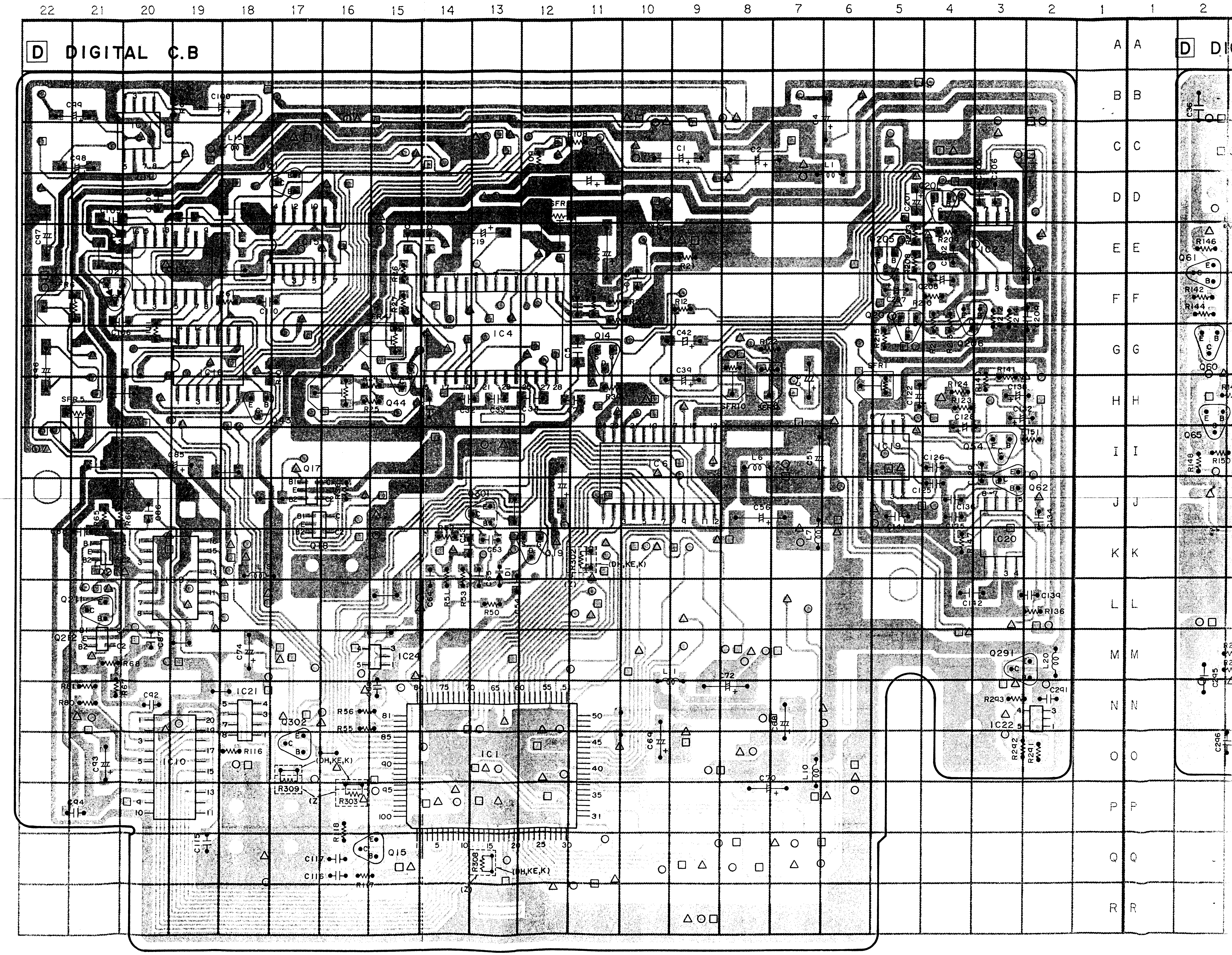
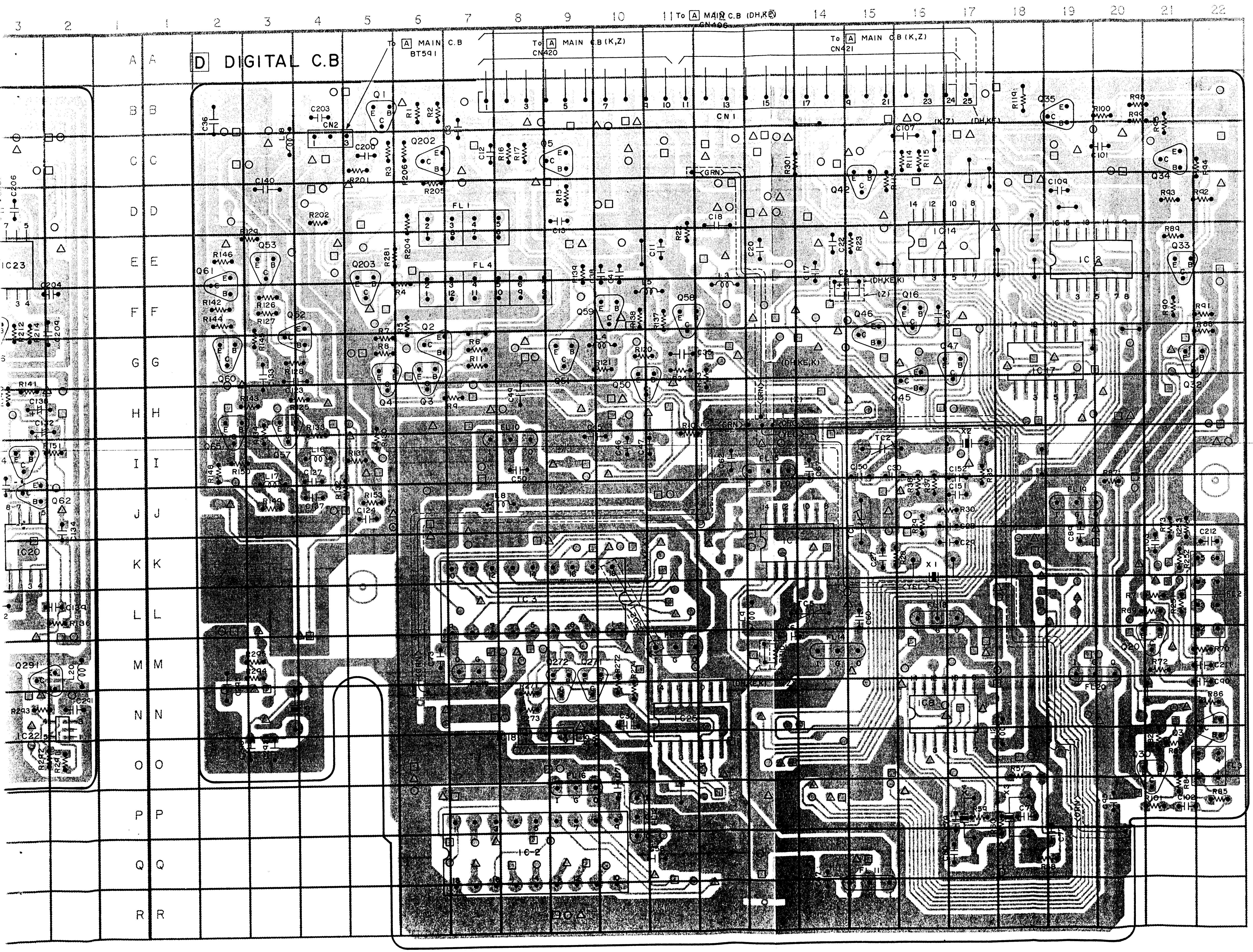
WIRING – 4 (DIGITAL SECTION)


D DIGITAL C.B
22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
A B C D E F G H I J K L M N O P Q R
IC1
IC4
IC6
IC10
IC16
IC19
IC20
IC21
IC22
IC23
IC24
Q14
Q15
Q17
Q18
Q19
Q43
Q44
Q54
Q62
Q205
Q206
Q211
Q212
Q291
Q301
Q302
C1
C2
C39
C42
C56
C70
C72
C74
C85
C86
C87
C92
C93
C94
C97
C98
C99
C100
C110
C115
C116
C117
C122
C125
C126
C134
C136
C139
C142
C291
R12
R25
R50
R53
R55
R56
R68
R80
R81
R108
R116
R117
R118
R123
R124
R136
R141
R204
R210
R241
R242
R243
R303
R306
R309
L1
L6
L7
L10
L13
L20
SFR1
SFR3
SFR5
SFR10
(DH,KE,K)
(Z)
D DI
C36
R146
Q61
R142
R144
Q60
Q65
R148
R150
C295
C296


D DIGITAL C.B
To A MAIN C.B
BT591
To A MAIN C.B (K,Z)
CN420
To A MAIN C.B (DH,KE)
CN406
To A MAIN C.B (K,Z)
CN421
CN1
CN2
(K,Z)
(DH,KE)
(GRN)
(YEL)
(DH,KE,K)
(Z)
FL1
FL4
IC2
IC3
IC8
IC14
IC15
IC17
IC20
IC22
IC23
IC25
X1
X2
Q1
Q2
Q3
Q4
Q5
Q16
Q20
Q30
Q32
Q33
Q34
Q35
Q42
Q45
Q46
Q47
Q50
Q51
Q52
Q53
Q57
Q58
Q59
Q60
Q61
Q62
Q65
Q202
Q203
Q204
Q271
Q272
Q291
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
1
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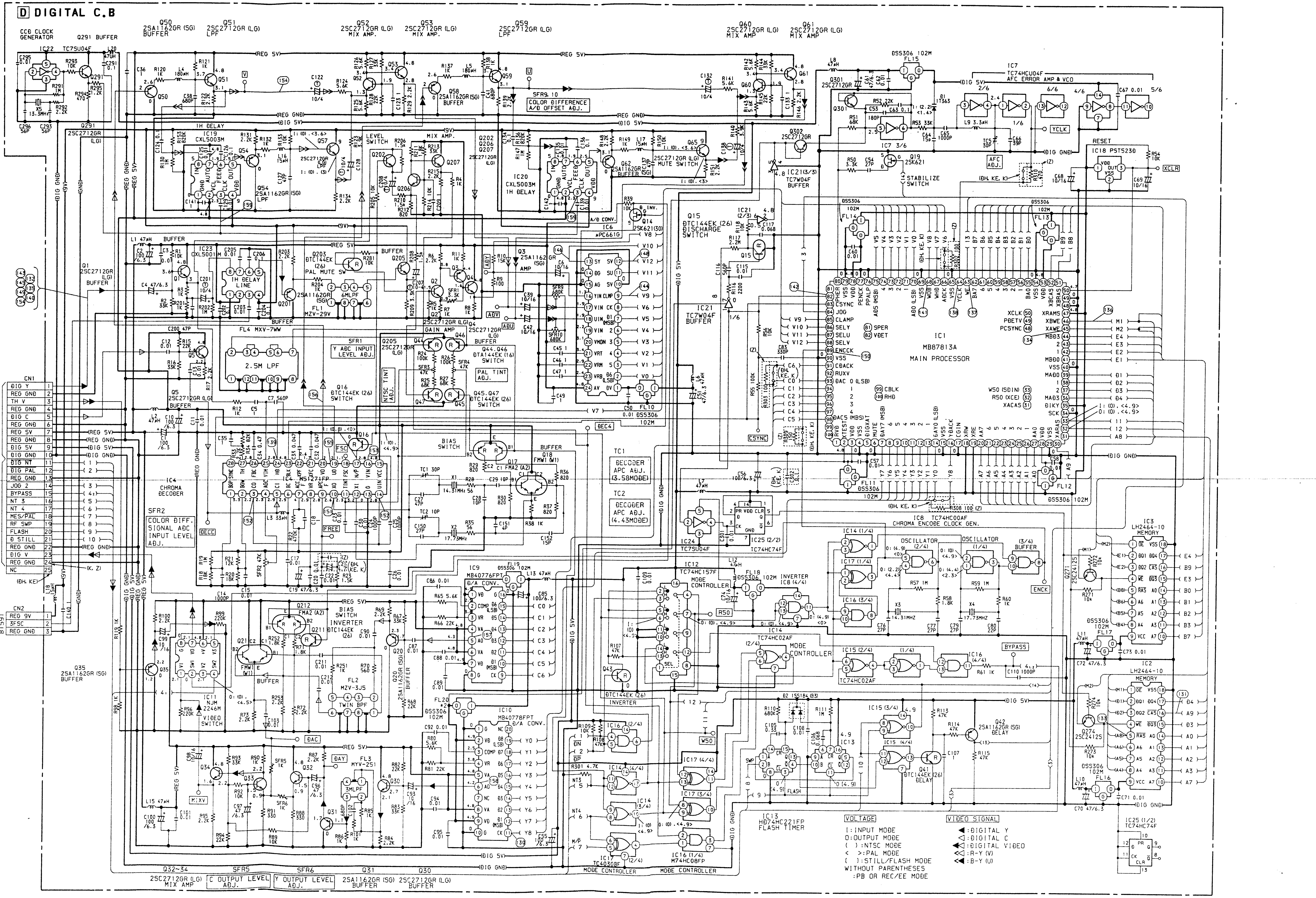
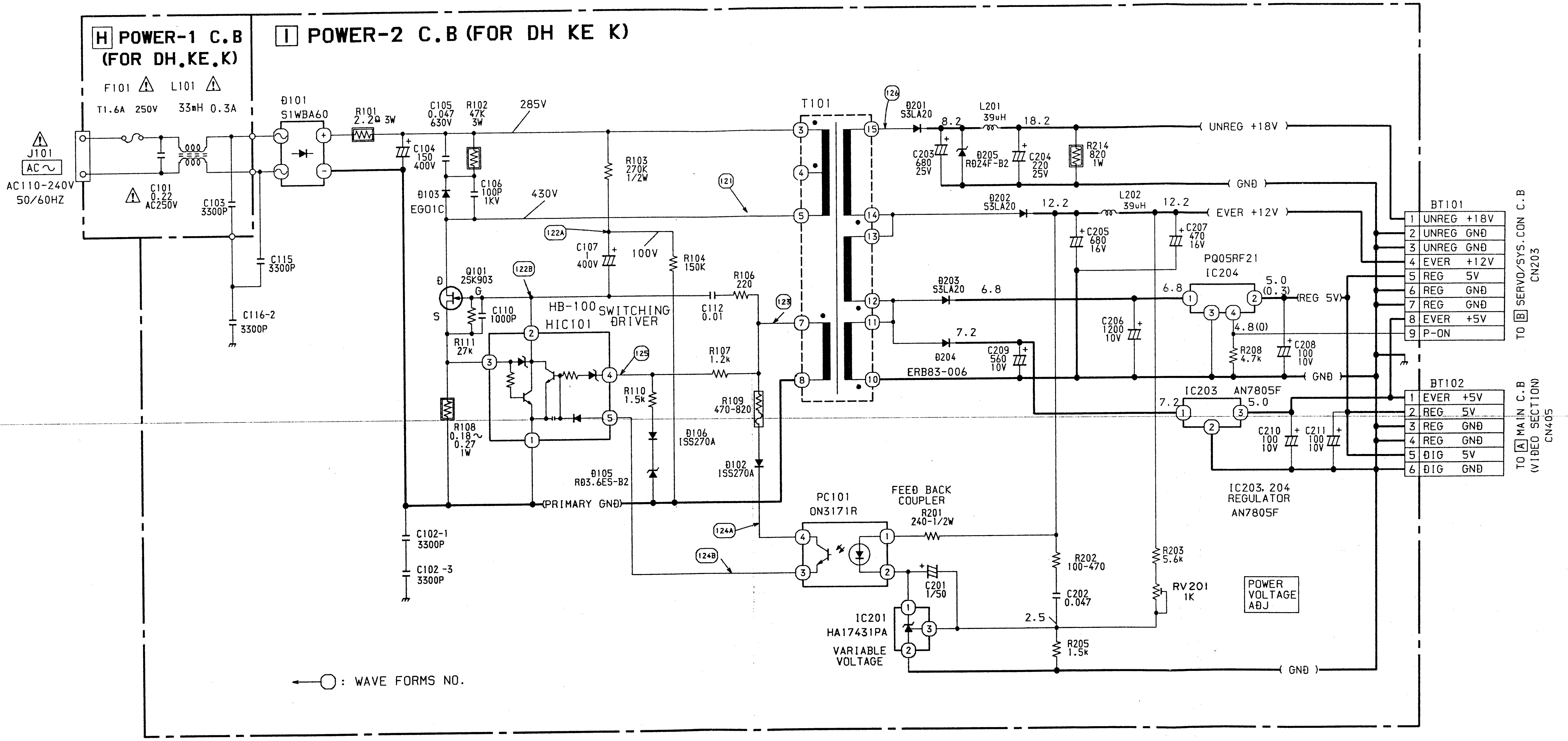
SCHEMATIC DIAGRAM – 11


D DIGITAL C.B
CCD CLOCK GENERATOR
Q291 BUFFER
IC22 TC7SU04F
Q50 2SA1162GR (SG) BUFFER
Q51 2SC2712GR (LG) LPF
Q52 2SC2712GR (LG) MIX AMP.
Q53 2SC2712GR (LG) MIX AMP.
Q59 2SC2712GR (LG) LPF
Q60 2SC2712GR (LG) MIX AMP
Q61 2SC2712GR (LG) MIX AMP
IC19 CXL5003M 1H DELAY
IC20 CXL5003M 1H DELAY
IC23 CXL5001M 1H DELAY LINE
Q54 2SA1162GR (SG) LPF
Q57 2SC2712GR (LG)
LEVEL SWITCH
MIX AMP.
Q202 Q206 Q207 2SC2712GR (LG)
SFR9 COLOR DIFFERENCE A/D OFFSET ADJ.
Q62 2SC2712GR (LG) MUTE SWITCH
Q65 BUFFER (SG)
Q14 2SK621 (30) INV.
IC6 μPC661G
Q15 DTC144EK (26) DISCHARGE SWITCH
IC21 TC7W04F BUFFER
Q301 2SC2712GR
Q302 2SC2712GR
IC7 TC74HCU04F AFC ERROR AMP & VCO
Q19 2SK621 STABILIZE SWITCH
AFC ADJ.
IC18 PST5230 RESET
XCLR
YCLK
IC1 MB87813A MAIN PROCESSOR
FL14 DSS306 102M
FL13 DSS306 102M
FL11 DSS306 102M
FL12 DSS306 102M
Q1 2SC2712GR (LG) BUFFER
Q203 DTC144EK (26) PAL MUTE SW
Q201 2SA1162GR (SG)
FL1 MZV-29V
FL4 MXV-7WW
2.5M LPF
SFR1 Y ADC INPUT LEVEL ADJ.
Q205 2SC2712GR (LG)
NTSC TINT ADJ.
Q44, Q46 DTA144EK (16) SWITCH
PAL TINT ADJ.
Q45, Q47 DTC144EK (26) SWITCH
Q16 DTC144EK (26) SWITCH
Q5 2SC2712GR (LG) BUFFER
IC4 CHROMA DECODER M51271FP
BIAS SWITCH
Q17 FMA2 (A2)
Q18 FMW1 (W1) BUFFER
X1 14.31MHz
X2 17.73MHz
TC1 DECODER APC ADJ. (3.58MODE)
TC2 DECODER APC ADJ. (4.43MODE)
SFR2 COLOR DIFF. SIGNAL ADC INPUT LEVEL ADJ.
CN1
DIG Y
REG GND
TH V
DIG C
REG 5V
DIG 5V
DIG GND
DIG NT
DIG PAL
JOG 2
BYPASS
NT 3
NT 4
MES/PAL
RF SWP
FLASH
B STILL
DIG V
NC
TO A MAIN C.B (DH. KE) (VIDEO SCTION) CN406
TO A MAIN C.B (K, Z) (VIDEO SECTION) CN421
CN2
REG 9V
3FSC
TO A MAIN C.B (VIDEO SECTION) BT591
Q35 2SA1162GR (SG) BUFFER
IC11 NJM 2246M VIDEO SWITCH
Q212 FMA2 (A2) BIAS SWITCH
Q211 DTC144EK (26) INVERTER
Q21 FMW1 (W1) BUFFER
FL2 MZV-3J5 TWIN BPF
Q20 2SA1162GR (SG) BUFFER
IC9 MB40776FPT D/A CONV.
IC10 MB40778FPT D/A CONV.
FL19 DSS306 102M
FL20 DSS306 102M
IC12 TC74HC157F MODE CONTROLLER
FL18 DSS306 102M
IC8 (4/4) INVERTER
IC14 TC74HC02AF MODE CONTROLLER
IC24 TC7S04F
IC25 (2/2) TC74HC74F
IC8 TC74HC00AF CHROMA ENCODE CLOCK GEN.
OSCILLATOR
BUFFER
X3 14.31MHZ
X4 17.73MHZ
ENCK
BYPASS
IC15 TC74HC02AF
IC16
Q43 DTC144EK (26) INVERTER
IC13 HD74HC221FP FLASH TIMER
Q41 DTC144EK (26) DELAY
Q42 2SA1162GR (SG) DELAY
IC17 TC4030BF MODE CONTROLLER
IC16 (1/4) M74HC08FP MODE CONTROLLER
IC3 LH2464-10 MEMORY
IC2 LH2464-10 MEMORY
Q271 2SC2412S
Q274 2SC2412S
FL17 DSS306 102M
FL16 DSS306 102M
IC25 (1/2) TC74HC74F
Q34 Q33 Q32 Q31 Q30
FL3 MYV-251 3MLPF
Q32~34 2SC2712GR (LG) MIX AMP
SFR5 C OUTPUT LEVEL ADJ.
SFR6 Y OUTPUT LEVEL ADJ.
Q31 2SA1162GR (SG) BUFFER
Q30 2SC2712GR (LG) BUFFER

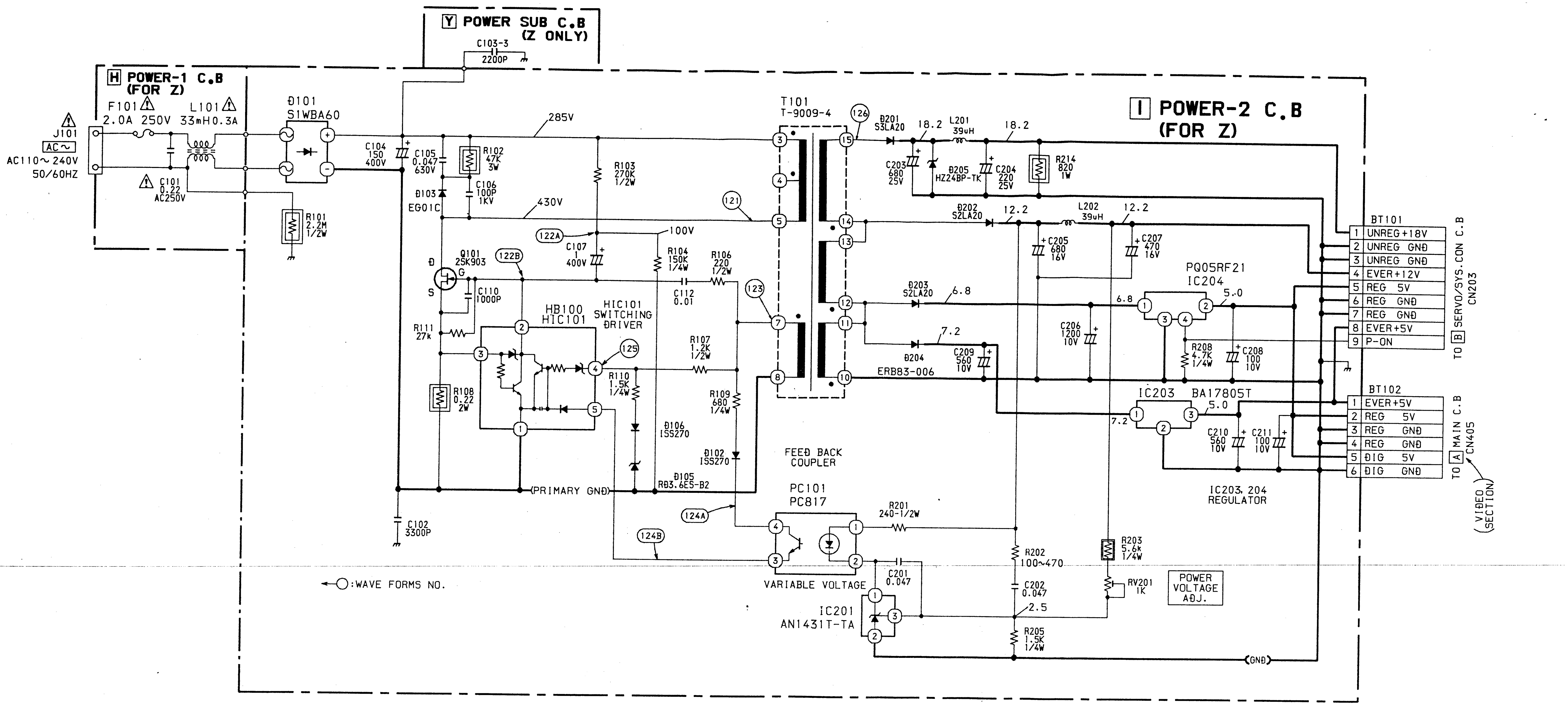
VOLTAGE
I : INPUT MODE
O : OUTPUT MODE
( ) : NTSC MODE
< > : PAL MODE
[ ] : STILL/FLASH MODE
WITHOUT PARENTHESES
:PB OR REC/EE MODE

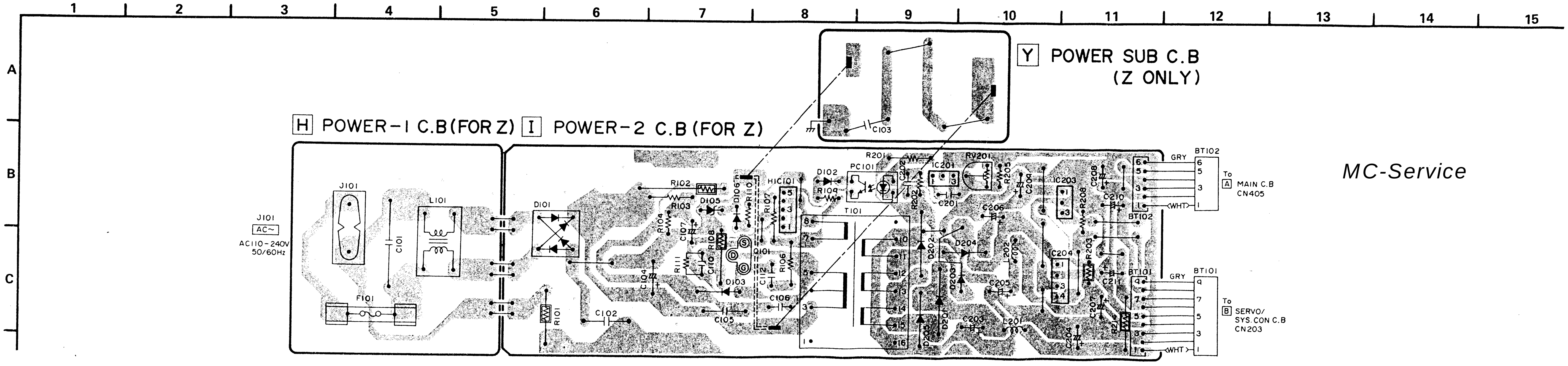
VIDEO SIGNAL
◁ : DIGITAL Y
◀ : DIGITAL C
◁◀ : DIGITAL VIDEO
◀◀ : R-Y (V)
◀◀ : B-Y (U)

SCHEMATIC DIAGRAM – 12 (POWER UNIT SECTION) MG330KE, DH, MG350K

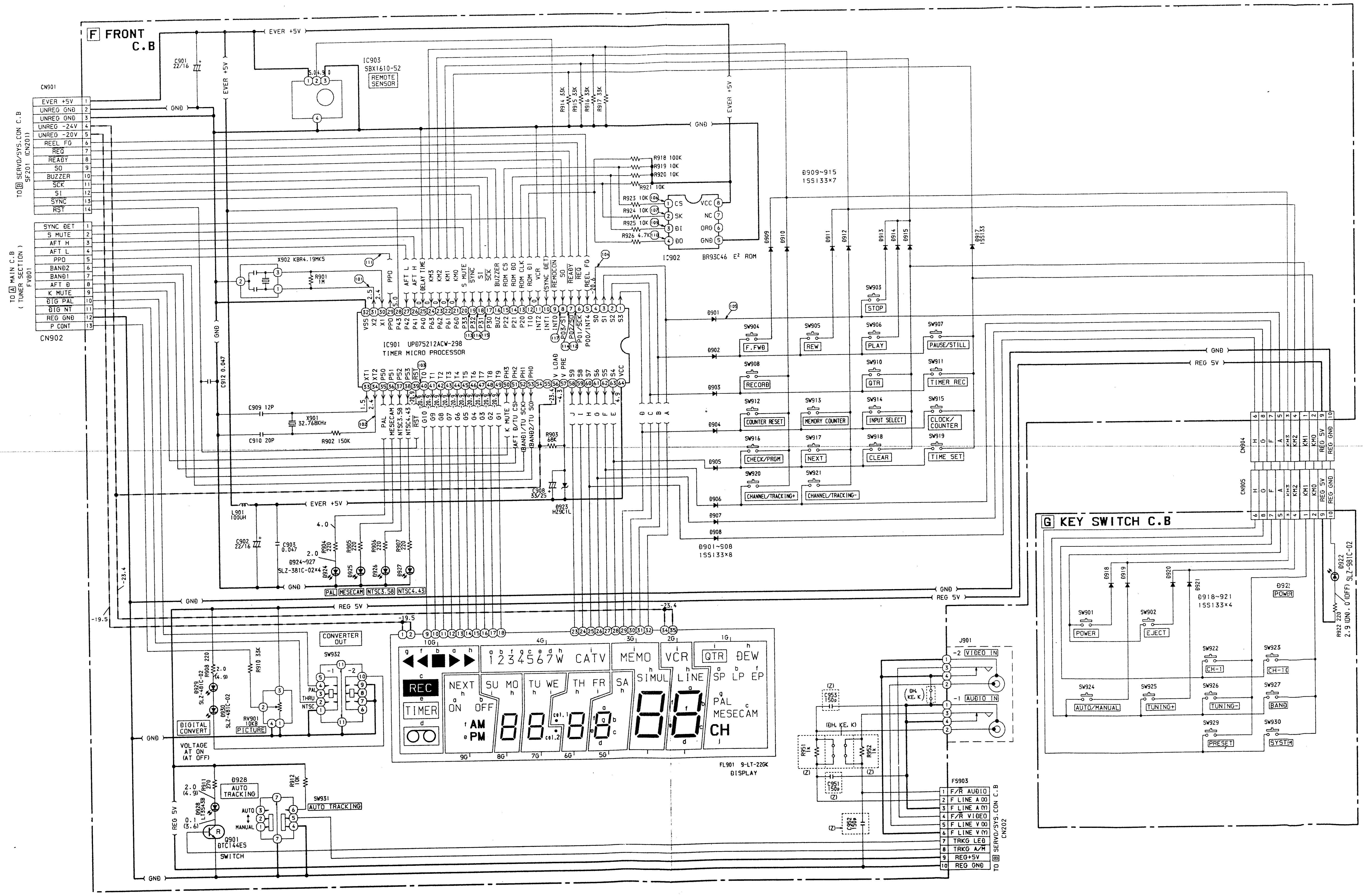

H POWER-1 C.B (FOR DH.KE.K)
F101 ⚠ L101 ⚠
T1.6A 250V 33mH 0.3A
I POWER-2 C.B (FOR DH KE K)
⚠ J101
AC~
AC110-240V 50/60HZ
⚠ C101 0.22 AC250V
C103 3300P
C115 3300P
C116-2 3300P
D101 S1WBA60
R101 2.2Ω 3W
C105 0.047 630V
R102 47K 3W
285V
C104 150 400V
C106 100P 1KV
D103 EG01C
430V
R103 270K 1/2W
121
122A
C107 1 400V
100V
R104 150K
Q101 2SK903
122B
D
G
S
C110 1000P
HB-100 HIC101
SWITCHING DRIVER
R111 27K
C112 0.01
R106 220
123
125
R107 1.2K
R110 1.5K
R109 470-820
R108 0.18~0.27 1W
D106 1SS270A
D105 RD3.6ES-B2
D102 1SS270A
(PRIMARY GND)
C102-1 3300P
C102-3 3300P
T101
124
D201 S3LA20
8.2
L201 39uH
18.2
C203 680 25V
D205 RD24F-B2
C204 220 25V
R214 820 1W
UNREG +18V
GND
D202 S3LA20
12.2
L202 39uH
12.2
EVER +12V
C205 680 16V
C207 470 16V
PQ05RF21 IC204
D203 S3LA20
6.8
6.8
5.0 (0.3)
REG 5V
C206 1200 10V
4.8(0)
R208 4.7K
C208 100 10V
7.2
D204 ERB83-006
C209 560 10V
GND
IC203 AN7805F
7.2
5.0
C210 100 10V
C211 100 10V
IC203, 204 REGULATOR AN7805F
PC101 ON3171R
FEED BACK COUPLER
R201 240-1/2W
124A
124B
R202 100-470
R203 5.6K
C201 1/50
C202 0.047
RV201 1K
POWER VOLTAGE ADJ
2.5
IC201 HA17431PA VARIABLE VOLTAGE
R205 1.5K
GND
BT101
1 UNREG +18V
2 UNREG GND
3 UNREG GND
4 EVER +12V
5 REG 5V
6 REG GND
7 REG GND
8 EVER +5V
9 P-ON
TO B SERVO/SYS.CON C.B CN203
BT102
1 EVER +5V
2 REG 5V
3 REG GND
4 REG GND
5 DIG 5V
6 DIG GND
TO A MAIN C.B (VIDEO SECTION) CN405
—○ : WAVE FORMS NO.

SCHEMATIC DIAGRAM – 13/WIRING – 5 (POWER UNIT SECTION) MG350Z

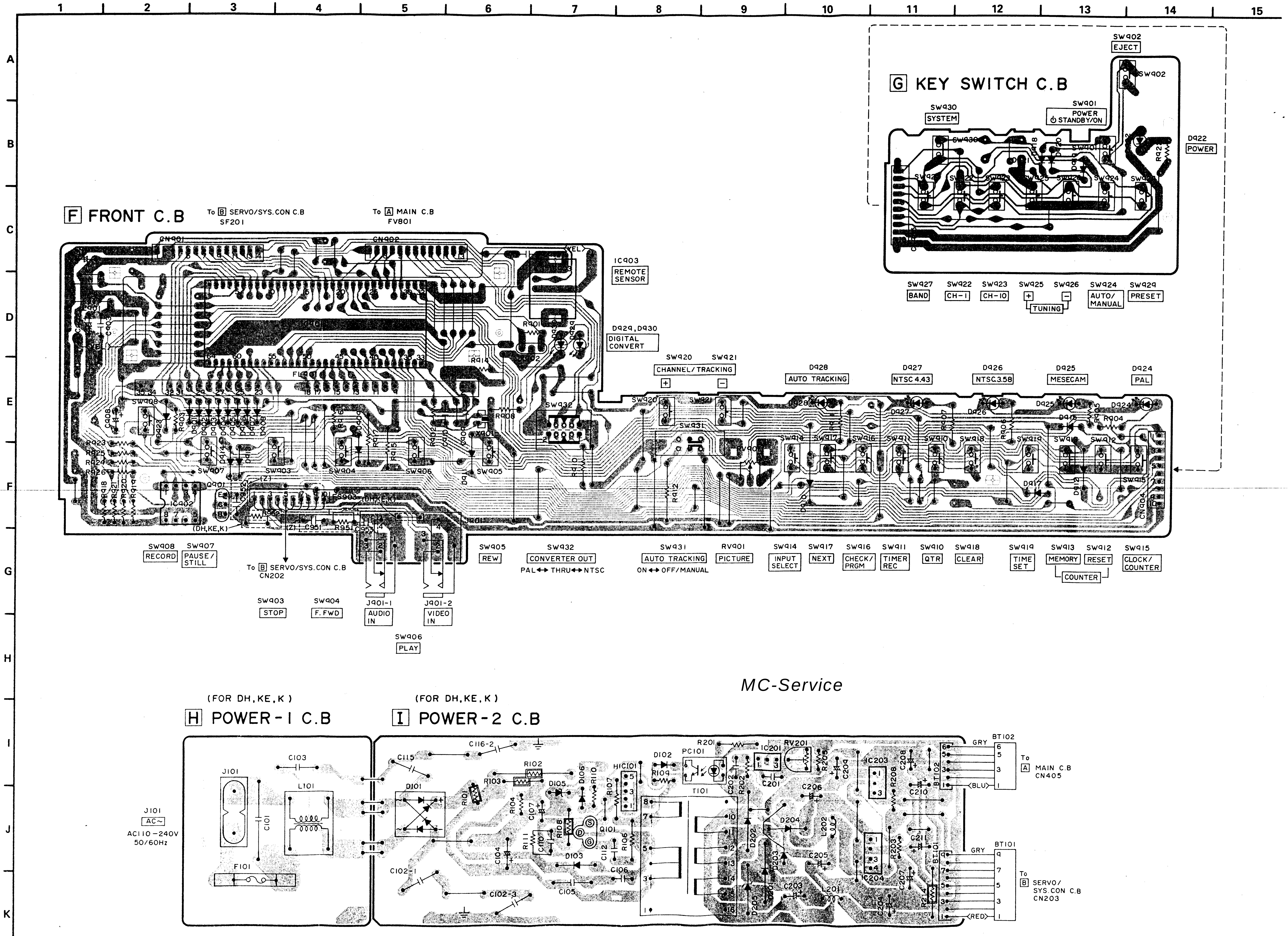

Y POWER SUB C.B (Z ONLY)
C103-3 2200P
H POWER-1 C.B (FOR Z)
F101 2.0A 250V
L101 33mH0.3A
J101
AC~
AC110~240V 50/60HZ
C101 0.22 AC250V
R101 2.2M 1/2W
D101 S1WBA60
285V
C104 150 400V
C105 0.047 630V
R102 47K 3W
R103 270K 1/2W
D103 EG01C
C106 100P 1KV
430V
122A
100V
C107 1 400V
Q101 2SK903
122B
D
G
S
C110 1000P
R104 150K 1/4W
R106 220 1/2W
C112 0.01
R111 27k
HB100 HIC101
HIC101 SWITCHING DRIVER
125
R107 1.2K 1/2W
R110 1.5K 1/4W
R108 0.22 2W
R109 680 1/4W
D106 1SS270
D102 1SS270
D105 RD3.6E5-B2
(PRIMARY GND)
C102 3300P
124A
124B
T101 T-9009-4
121
123
126
D201 S3LA20
18.2
L201 39uH
18.2
C203 680 25V
D205 HZ24BP-TK
C204 220 25V
R214 820 1W
D202 S2LA20
12.2
L202 39uH
12.2
C205 680 16V
C207 470 16V
D203 S2LA20
6.8
D204 ERB83-006
7.2
C209 560 10V
C206 1200 10V
PQ05RF21 IC204
6.8
5.0
R208 4.7K 1/4W
C208 100 10V
IC203 BA17805T
7.2
5.0
C210 560 10V
C211 100 10V
IC203, 204 REGULATOR
I POWER-2 C.B (FOR Z)
BT101
1 UNREG+18V
2 UNREG GND
3 UNREG GND
4 EVER+12V
5 REG 5V
6 REG GND
7 REG GND
8 EVER+5V
9 P-ON
TO B SERVO/SYS.CON C.B CN203
BT102
1 EVER+5V
2 REG 5V
3 REG GND
4 REG GND
5 DIG 5V
6 DIG GND
TO A MAIN C.B CN405
(VIDEO SECTION)
FEED BACK COUPLER
PC101 PC817
R201 240-1/2W
R202 100~470
C201 0.047
C202 0.047
2.5
R205 1.5K 1/4W
R203 5.6k 1/4W
RV201 1K
POWER VOLTAGE ADJ.
VARIABLE VOLTAGE
IC201 AN1431T-TA
(GND)
◄○: WAVE FORMS NO.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
Y POWER SUB C.B (Z ONLY)
C103
H POWER-1 C.B(FOR Z)
I POWER-2 C.B(FOR Z)
J101
AC~
AC110-240V 50/60Hz
L101
C101
F101
D101
R101
C102
R102
R103
D105
R104
C107
R108
R111
C110
D103
C104
C105
C106
Q101
D106
R110
HIC101
R107
R106
C112
D102
R109
PC101
T101
R201
RV201
C201
IC201
R202
C202
D202
D203
D204
C209
C205
C206
L201
C203
C204
C207
IC203
IC204
R208
C208
C210
C211
R203
R214
BT102
BT101
GRY
WHT
To A MAIN C.B CN405
To B SERVO/ SYS.CON C.B CN203

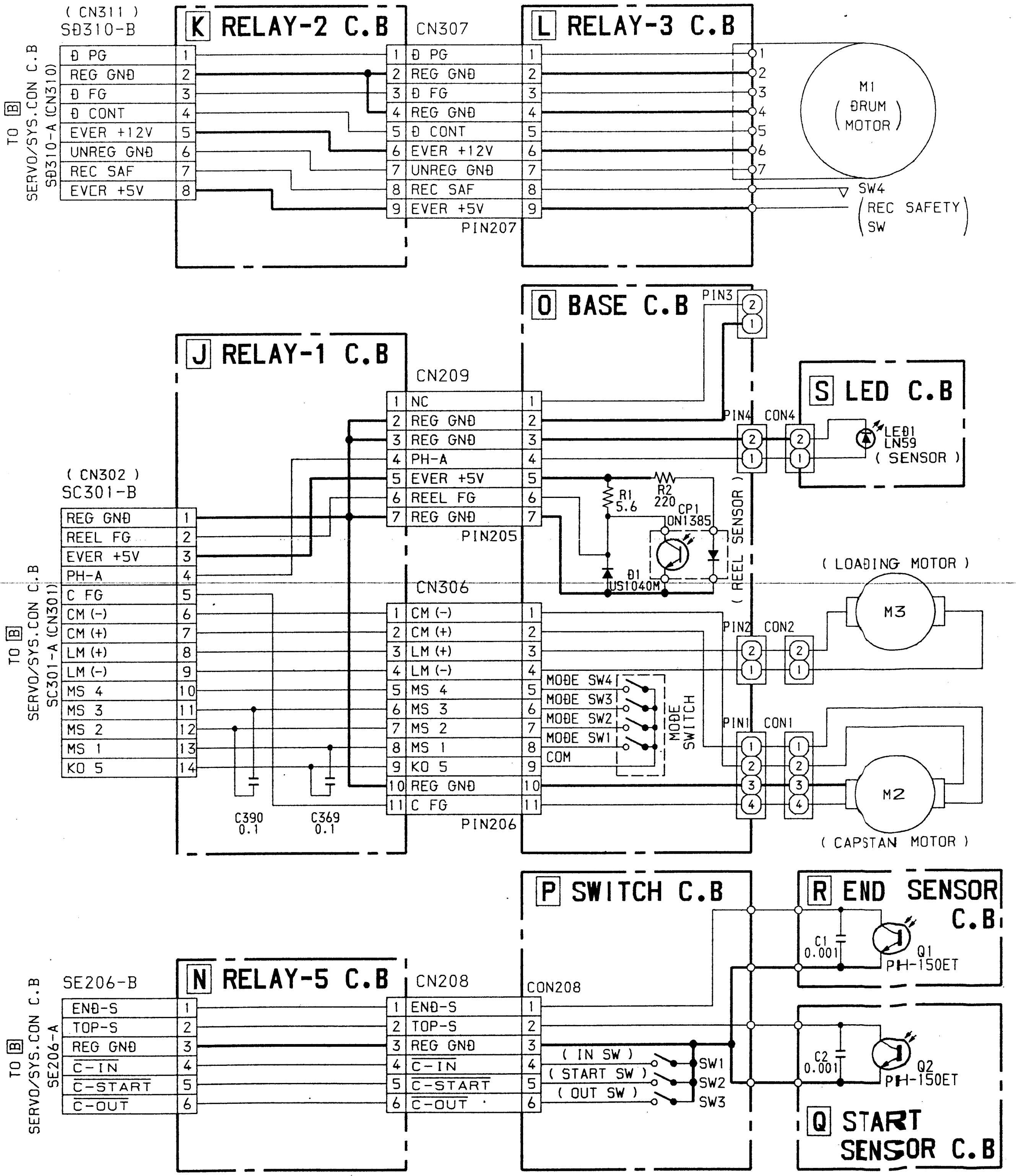
SCHEMATIC DIAGRAM – 14 (FRONT SECTION)


F FRONT C.B
EVER +5V
GND
REG 5V
C901 22/16
IC903 SBX1610-52 REMOTE SENSOR
CN901
EVER +5V
UNREG GND
UNREG GND
UNREG -24V
UNREG -20V
REEL FG
REQ
READY
SO
BUZZER
SCK
SI
SYNC
RST
TO B SERVO/SYS.CON C.B SF201 (CN201)
SYNC DET
S MUTE
AFT H
AFT L
PPO
BAND2
BAND1
AFT D
K MUTE
DIG PAL
DIG NT
REG GND
P CONT
TO A MAIN C.B (TUNER SECTION) FV801
CN902
R914 33K
R915 33K
R916 33K
R917 33K
R918 100K
R919 10K
R920 10K
R921 10K
R923 10K
R924 10K
R925 10K
R926 4.7K
CS
SK
DI
DO
VCC
NC
ORG
GND
IC902 BR93C46 E² ROM
D909~915 1SS133×7
X902 KBR4.19MKS
R901 1M
IC901 UPD75212ACW-298 TIMER MICRO PROCESSOR
C912 0.047
C909 12P
X901 32.768KHz
C910 20P
R902 150K
R903 68K
C908 33/25
D923 HZ9C1L
L901 100UH
C902 22/16
C903 0.047
R904 220
R905 220
R906 220
R907 220
D924~927 SLZ-381C-02×4
PAL
MESECAM
NTSC3.58
NTSC4.43
D901~908 1SS133×8
SW903 STOP
SW904 F.FWD
SW905 REW
SW906 PLAY
SW907 PAUSE/STILL
SW908 RECORD
SW910 QTR
SW911 TIMER REC
SW912 COUNTER RESET
SW913 MEMORY COUNTER
SW914 INPUT SELECT
SW915 CLOCK/COUNTER
SW916 CHECK/PRGM
SW917 NEXT
SW918 CLEAR
SW919 TIME SET
SW920 CHANNEL/TRACKING+
SW921 CHANNEL/TRACKING-
CN904
CN905
G KEY SWITCH C.B
D918~921 1SS133×4
D922 SLZ-981C-02
POWER
R922 220
2.9 (ON), 0 (OFF)
SW901 POWER
SW902 EJECT
SW922 CH-1
SW923 CH-10
SW924 AUTO/MANUAL
SW925 TUNING+
SW926 TUNING-
SW927 BAND
SW929 PRESET
SW930 SYSTEM
CONVERTER OUT
SW932
PAL
THRU
NTSC
DIGITAL CONVERT
RV901 10KB PICTURE
R910 33K
D929 SLZ-481C-02
D930 SLZ-481C-02
R908 220
VOLTAGE AT ON (AT OFF)
D928 AUTO TRACKING
R911 270
R912 10K
SW931 AUTO TRACKING
AUTO
MANUAL
Q901 DTC144ES SWITCH
REG 5V
NEXT SU MO TU WE TH FR SA SIMUL LINE SP LP EP
ON OFF AM PM
REC TIMER
1234567W CATV MEMO VCR QTR DEW
PAL MESECAM CH
FL901 9-LT-22GK DISPLAY
J901 VIDEO IN
AUDIO IN
C953 150p
C951 150p
C952 150p
R951 1K
R952 1K
FS903
F/R AUDIO
F LINE A (X)
F LINE A (Y)
F/R VIDEO
F LINE V (X)
F LINE V (Y)
TRKG LED
TRKG A/M
REG+5V
REG GND
TO B SERVO/SYS.CON C.B CN202

WIRING – 6 (FRONT/POWER UNIT SECTION)



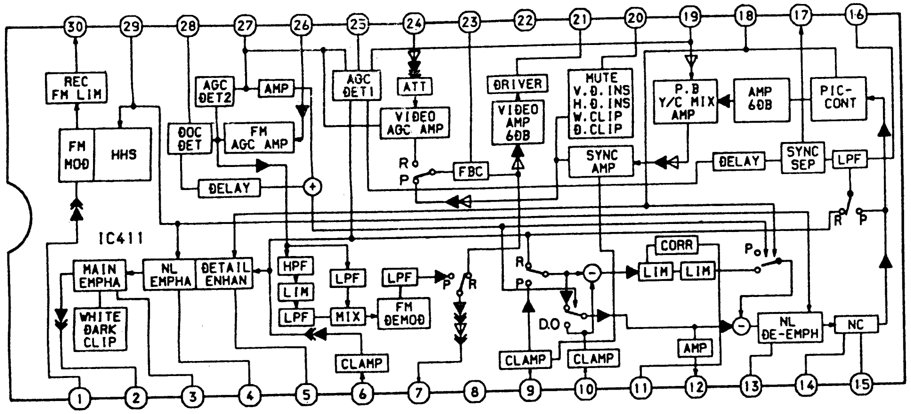
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J K
G KEY SWITCH C.B
SW902 EJECT
SW930 SYSTEM
SW901 POWER ⏻ STANDBY/ON
D922 POWER
SW927 BAND
SW922 CH-1
SW923 CH-10
SW925 + SW926 − TUNING
SW924 AUTO/MANUAL
SW929 PRESET
F FRONT C.B
To B SERVO/SYS.CON C.B SF201
To A MAIN C.B FV801
CN901
CN902
IC903 REMOTE SENSOR
D929, D930 DIGITAL CONVERT
SW920 SW921 CHANNEL/TRACKING + −
D928 AUTO TRACKING
D927 NTSC 4.43
D926 NTSC 3.58
D925 MESECAM
D924 PAL
FL901
IC902
Q901
J901
CN904
SW908 RECORD
SW907 PAUSE/STILL
To B SERVO/SYS.CON C.B CN202
SW903 STOP
SW904 F.FWD
J901-1 AUDIO IN
J901-2 VIDEO IN
SW906 PLAY
SW905 REW
SW932 CONVERTER OUT PAL↔THRU↔NTSC
SW931 AUTO TRACKING ON↔OFF/MANUAL
RV901 PICTURE
SW914 INPUT SELECT
SW917 NEXT
SW916 CHECK/PRGM
SW911 TIMER REC
SW910 QTR
SW918 CLEAR
SW919 TIME SET
SW913 MEMORY
SW912 RESET
COUNTER
SW915 CLOCK/COUNTER
(FOR DH, KE, K)
H POWER-1 C.B
(FOR DH, KE, K)
I POWER-2 C.B
J101 AC~ AC110-240V 50/60Hz
J101
C103
L101
C101
F101
C115
C116-2
D101
C102-1
C102-3
R102
R103
R101
R104
C107
D105
D106
R110
R107
HIC101
D102
R109
PC101
R201
IC201
RV201
R205
C204
IC203
C208
R208
C210
T101
Q101
R106
C112
C106
D103
C105
C110
R111
C104
R108
D202
D203
D204
L202
C205
C203
L201
C201
R202
C202
R203
C211
IC204
C207
R214
D205
BT102 GRY 6 5 3 1 (BLU)
To A MAIN C.B CN405
BT101 GRY 9 7 5 3 1 (RED)
To B SERVO/SYS.CON C.B CN203


(CN311)
SD310-B
TO B SERVO/SYS.CON C.B SD310-A (CN310)
D PG
REG GND
D FG
D CONT
EVER +12V
UNREG GND
REC SAF
EVER +5V
K RELAY-2 C.B
CN307
D PG
REG GND
D FG
REG GND
D CONT
EVER +12V
UNREG GND
REC SAF
EVER +5V
PIN207
L RELAY-3 C.B
M1
(DRUM MOTOR)
SW4
(REC SAFETY SW)
O BASE C.B
PIN3
J RELAY-1 C.B
CN209
NC
REG GND
REG GND
PH-A
EVER +5V
REEL FG
REG GND
PIN205
(CN302)
SC301-B
TO B SERVO/SYS.CON C.B SC301-A (CN301)
REG GND
REEL FG
EVER +5V
PH-A
C FG
CM (-)
CM (+)
LM (+)
LM (-)
MS 4
MS 3
MS 2
MS 1
KO 5
CN306
CM (-)
CM (+)
LM (+)
LM (-)
MS 4
MS 3
MS 2
MS 1
KO 5
REG GND
C FG
PIN206
C390 0.1
C369 0.1
R1 5.6
R2 220
CP1 ON1385
D1 US1040M
(REEL SENSOR)
MODE SW4
MODE SW3
MODE SW2
MODE SW1
COM
MODE SWITCH
PIN4
CON4
S LED C.B
LED1 LN59
(SENSOR)
(LOADING MOTOR)
M3
PIN2
CON2
PIN1
CON1
M2
(CAPSTAN MOTOR)
P SWITCH C.B
R END SENSOR C.B
C1 0.001
Q1 PH-150ET
N RELAY-5 C.B
SE206-B
TO B SERVO/SYS.CON C.B SE206-A
END-S
TOP-S
REG GND
C-IN
C-START
C-OUT
CN208
END-S
TOP-S
REG GND
C-IN
C-START
C-OUT
CON208
(IN SW)
(START SW)
(OUT SW)
SW1
SW2
SW3
C2 0.001
Q2 PH-150ET
Q START SENSOR C.B

MC-Service

IC, BLOCK DIAGRAM

IC, LA7323


REC FM LIM
FM MOD
HHS
AGC DET2
AMP
DOC DET
FM AGC AMP
DELAY
AGC DET1
ATT
VIDEO AGC AMP
FBC
DRIVER
VIDEO AMP 6DB
MUTE V.D.INS H.D.INS W.CLIP D.CLIP
SYNC AMP
P.B Y/C MIX AMP
AMP 6DB
PIC-CONT
DELAY
SYNC SEP
LPF
IC411
MAIN EMPHA
NL EMPHA
DETAIL ENHAN
WHITE DARK CLIP
HPF
LIM
LPF
LPF
MIX
LPF
FM DEMOD
CORR
LIM
LIM
D.O
CLAMP
CLAMP
CLAMP
AMP
NL DE-EMPH
NC
R
P
1
2
3
4
5
6
7
8
9
10
11
12
13
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15
16
17
18
19
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22
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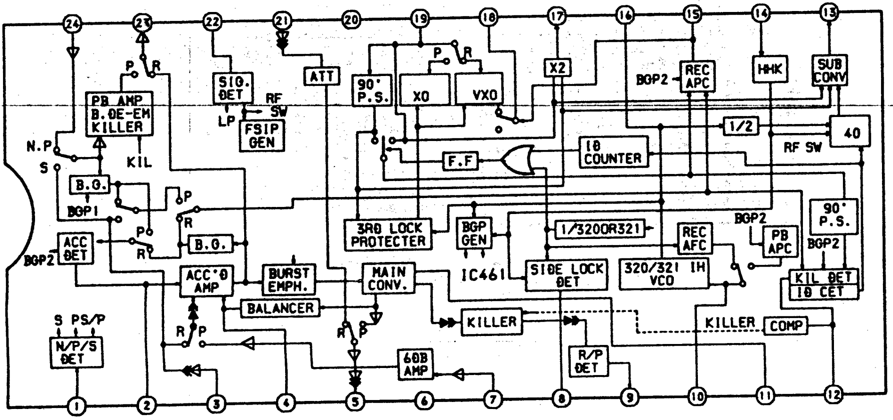
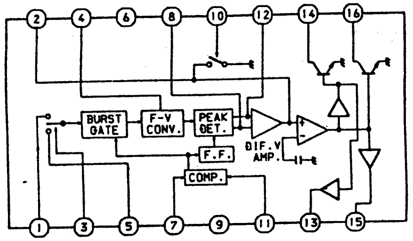
25
26
27
28
29
30

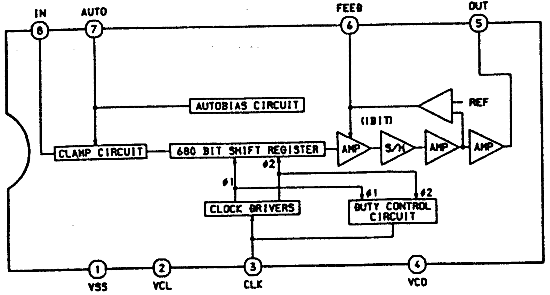
IC, LA7333


PB AMP B.DE-EM KILLER
N.P
S
KIL
B.D.
BGP1
B.D.
ACC DET
BGP2
ACC'D AMP
BURST EMPH.
BALANCER
S PS/P
N/P/S DET
SIG. DET
RF SW
LP
FSIP GEN
ATT
90° P.S.
XO
VXO
X2
F.F
18 COUNTER
3RD LOCK PROTECTER
BGP GEN
IC461
MAIN CONV.
1/320OR321
SIDE LOCK DET
320/321 IH VCO
REC AFC
BGP2
REC APC
HHK
SUB CONV
1/2
40
RF SW
90° P.S.
PB APC
KIL DET 18 CET
KILLER
KILLER
COMP
6DB AMP
R/P DET
R
P
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

IC, LA7311

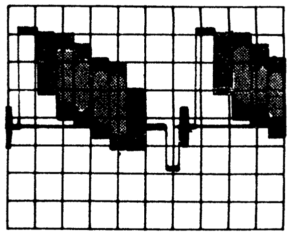

BURST GATE
F-V CONV.
PEAK DET.
F.F.
COMP.
BIF.V AMP.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

IC, CXL5001P
IC, CXL5003P

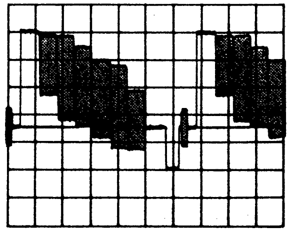

IN
AUTO
FEED
OUT
AUTOBIAS CIRCUIT
REF
(1BIT)
CLAMP CIRCUIT
680 BIT SHIFT REGISTER
AMP
S/H
AMP
AMP
#1
#2
#1
#2
CLOCK DRIVERS
DUTY CONTROL CIRCUIT
VSS
VCL
CLK
VCO
1
2
3
4
5
6
7
8

WAVE FORM
VIDEO SECTION

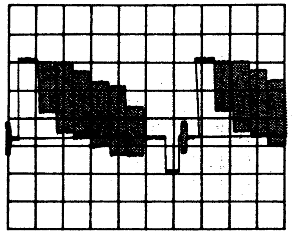
LINE IN (EE, PAL)
200mV/div.
10 μ s/div.

①


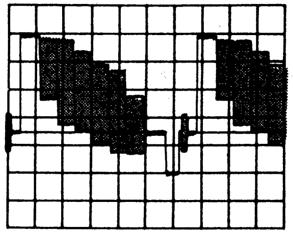
IC401 Pin㉔ (EE, PAL)
200mV/div.
10 μ s/div.

②


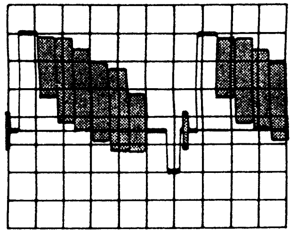
IC401 Pin㉑ (EE, PAL)
500mV/div.
10 μ s/div.

③


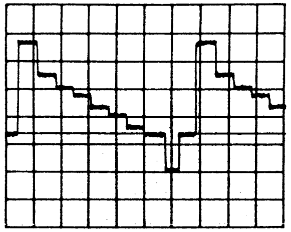
IC401 Pin⑦ (EE, PAL)
200mV/div.
10 μ s/div.

④


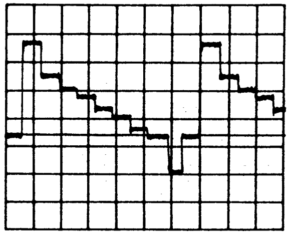
LINE OUT (EE, PAL)
200mV/div.
10 μ s/div.

⑤


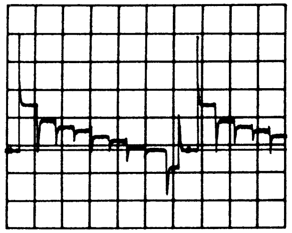
IC401 Pin⑥ (EE, PAL)
100mV/div.
10 μ s/div.

⑥


IC401 Pin③ (EE, PAL)
100mV/div.
10 μ s/div.

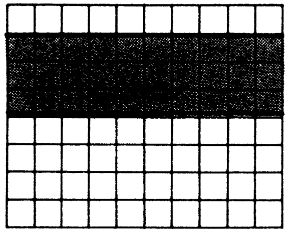
⑦


IC401 Pin② (EE, PAL)
200mV/div.
10 μ s/div.

⑧


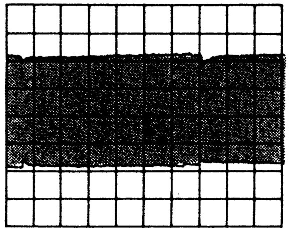
IC401 Pin㉚ (EE, PAL)
500mV/div.
10 µ s/div.

⑨



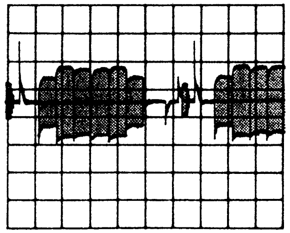
HV403 (KE, DH), VH403 (K, Z) Pin⑥(EE, PAL)
100mV/div.
10 µ s/div.

⑩



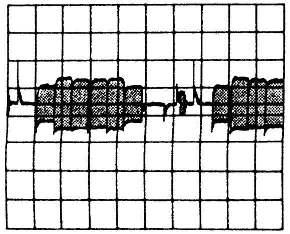
IC501 Pin㉑ (EE, PAL)
200mV/div.
10 µ s/div.

⑪



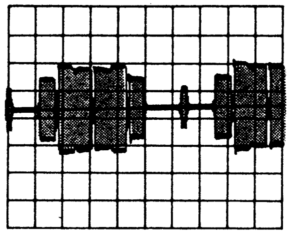
IC501 Pin⑤(EE, PAL)
200mV/div.
10 µ s/div.

⑫



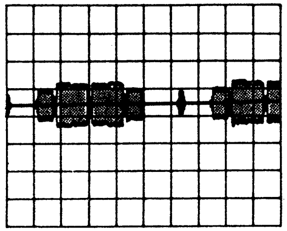
IC501 Pin③(EE, PAL)
50mV/div.
10 µ s/div.

⑬



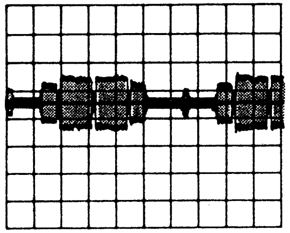
IC501 Pin⑨(EE, PAL)
500mV/div.
10 µ s/div.

⑭



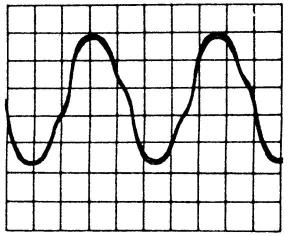
HV403 (KE, DH), VH403 (K, Z) Pin⑧(EE, PAL)
20mV/div.
10 µ s/div.

⑮



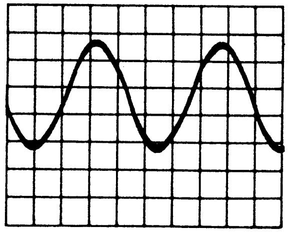
IC501 Pin ⑱ (EE, PAL)
200mV/div.
50ns/div.

⑯



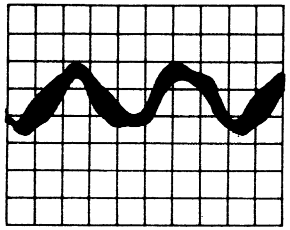
IC501 Pin⑲ (EE, PAL)
200mV/div.
50ns/div.

⑰



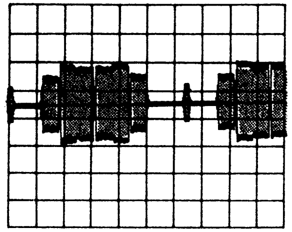
IC501 Pin⑬(EE, PAL)
100mV/div.
50ns/div.

⑱



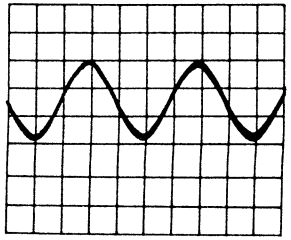
IC501 Pin㉓ (EE, PAL)
200mV/div.
10 µ s/div.

⑲



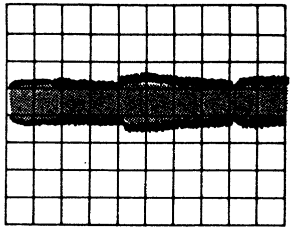
IC501 Pin⑪(EE, PAL)
50mV/div.
50ns/div.

⑳



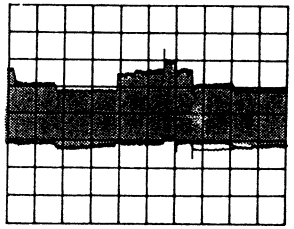
VH403 Pin⑨(PB, PAL)
100mV/div.
5ms/div.

㉑



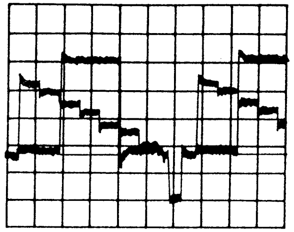
IC401 Pin⑦(PB, PAL)
500mV/div.
10 µ s/div.

㉒



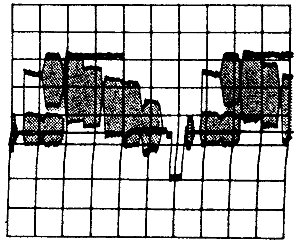
IC401 Pin⑨(PB, PAL)
100mV/div.
10 µ s/div.

㉓



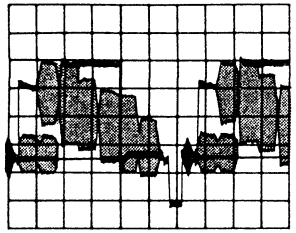
IC401 Pin㉑ (PB, PAL)
500mV/div.
10 µ s/div.

㉔



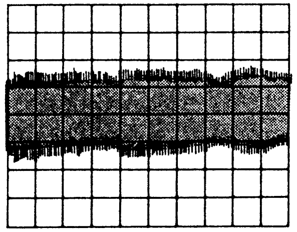
LINE OUT (PB, PAL)
200mV/div.
10μs/div.

㉕



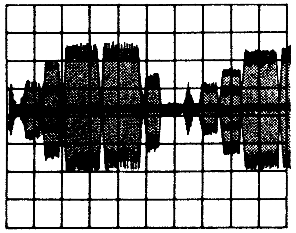
HV403 (KE, DH), VH403 (K, Z) Pin⑪ (PB, PAL)
100mV/div.
5ms/div.

㉖



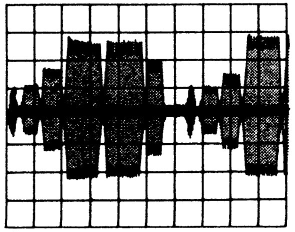
IC501 Pin⑦ (PB, PAL)
50mV/div.
10μs/div.

㉗



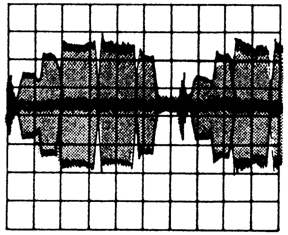
IC501 Pin⑤ (PB, PAL)
200mV/div.
10μs/div.

㉘



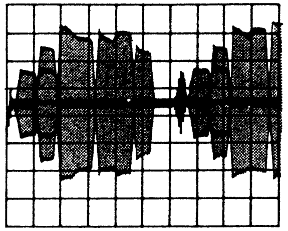
IC501 Pin③ (PB, PAL)
50mV/div.
10μs/div.

㉙



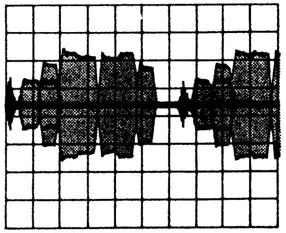
IC501 Pin㉔ (PB, PAL)
50mV/div.
10μs/div.

㉚



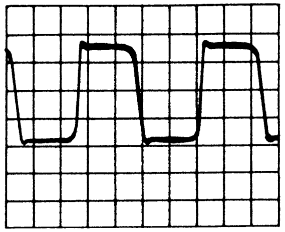
IC501 Pin㉓ (PB, PAL)
200mV/div.
10μs/div.

㉛



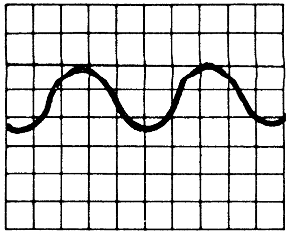
IC501 Pin⑱ (PB, PAL)
200mV/div.
50ns/div.

㉜



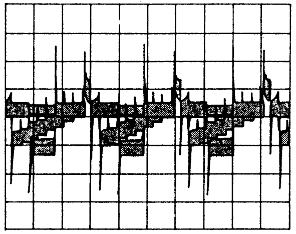
IC501 Pin⑲ (PB, PAL)
200mV/div.
50ns/div.

㉝



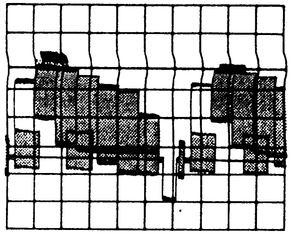
FL401 OUT(PB, PAL)
100mV/div.
20μs/div.

㉞



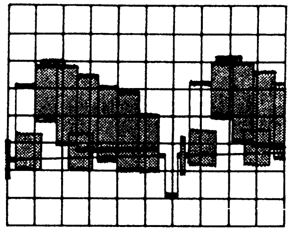
LINE IN (EE, NTSC)
200mV/div.
10μs/div.

㊵



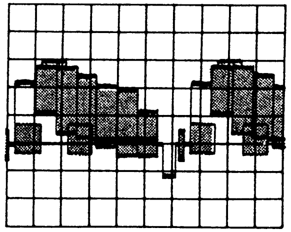
IC401 Pin㉔ (EE, NTSC)
200mV/div.
10μs/div.

㊶



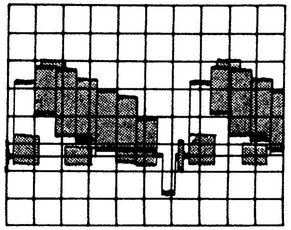
IC401 Pin㉑ (EE, NTSC)
500mV/div.
10μs/div.

㊷



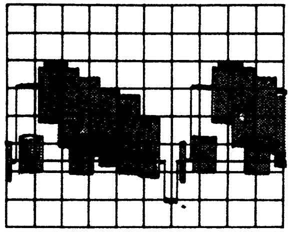
LINE OUT (EE, NTSC)
200mV/div.
10μs/div.

㊸



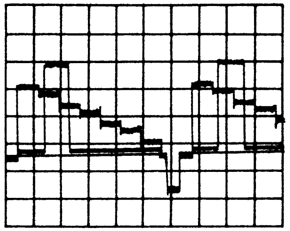
IC401 Pin⑦(EE, NTSC)
200mV/div.
10μs/div.

㊹



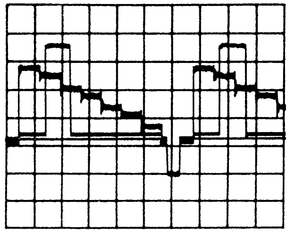
IC401 Pin⑥(EE, NTSC)
100mV/div.
10μs/div.

㊺



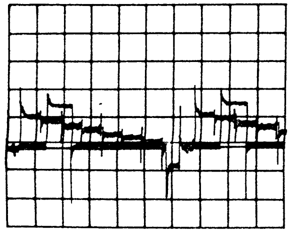
IC401 Pin③(EE, NTSC)
100mV/div.
10μs/div.

㊻



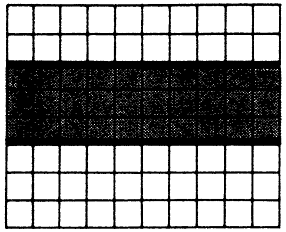
IC401 Pin②(EE, NTSC)
200mV/div.
10μs/div.

㊼



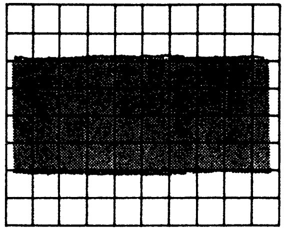
IC401 Pin㉚ (EE, NTSC)
500mV/div.
10μs/div.

㊽



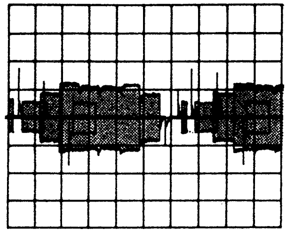
HV403 (KE, DH), VH403 (K, Z) Pin⑥(EE, NTSC)
100mV/div.
10μs/div.

㊾



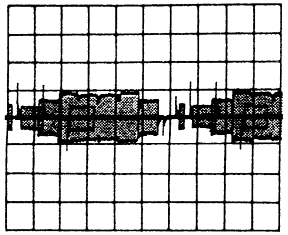
IC501 Pin㉑ (EE, NTSC)
200mV/div.
10μs/div.

㊿



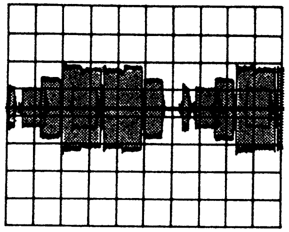
IC501 Pin⑤(EE, NTSC)
200mV/div.
10μs/div.

(51)



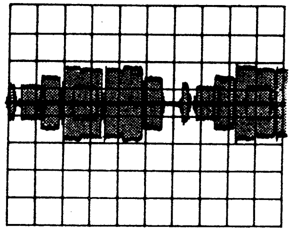
IC501 Pin③(EE, NTSC)
50mV/div.
10μs/div.

(52)



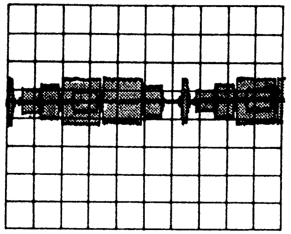
IC501 Pin㉓ (EE, NTSC)
200mV/div.
10μs/div.

(53)



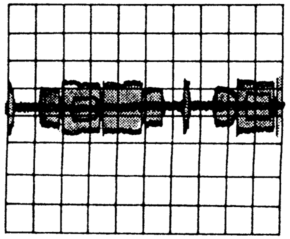
IC501 Pin⑨(EE, NTSC)
500mV/div.
10μs/div.

(54)



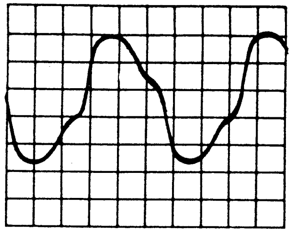
HV403 (KE, DH), VH403 (K, Z) Pin⑧(EE, NTSC)
20mV/div.
10μs/div.

(55)



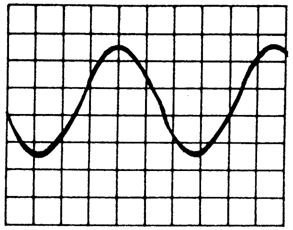
IC501 Pin⑱ (EE, NTSC)
200mV/div.
50ns/div.

(56)



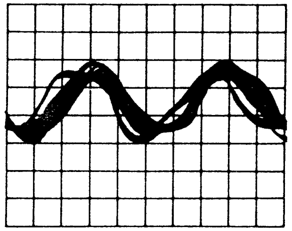
IC501 Pin⑲ (EE, NTSC)
200mV/div.
50ns/div.

(57)



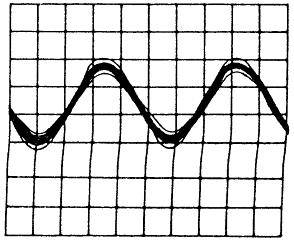
IC501 Pin⑬(EE, NTSC)
100mV/div.
50ns/div.

(58)

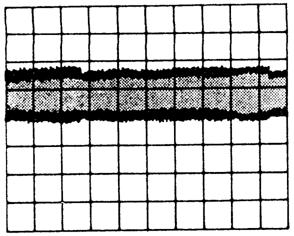


IC501 Pin⑪(EE, NTSC)
50mV/div.
50ns/div.

(59)

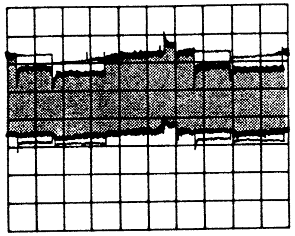


HV403 (KE. DH), VH403 (K, Z) Pin ⑨ (PB, NTSC)
100mV/div.
5ms/div.



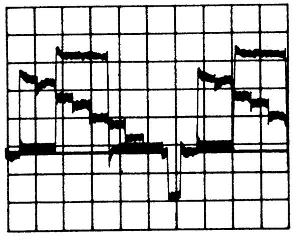
(60)

IC401 Pin ⑦ (PB, NTSC)
500mV/div.
10 μ s/div.



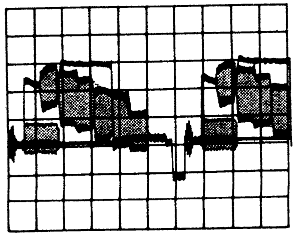
(61)

IC401 Pin ⑨ (PB, NTSC)
100mV/div.
10 μ s/div.



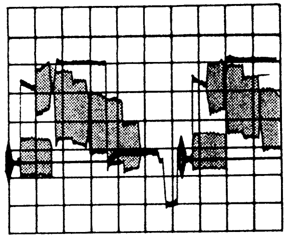
(62)

IC401 Pin ㉑ (PB, NTSC)
500mV/div.
10 μ s/div.



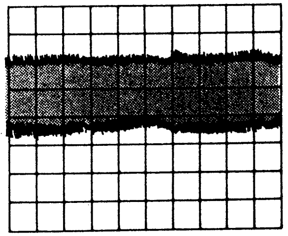
(63)

LINE OUT (PB, NTSC)
200mV/div.
10 μ s/div.



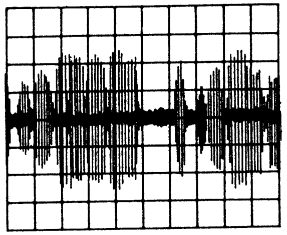
(64)

HV403 (KE, DH). VH403 (K, Z) Pin ⑪ (PB, NTSC)
100mV/div.
5ms/div.



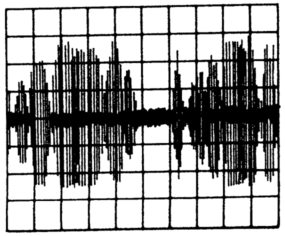
(65)

IC501 Pin ⑦ (PB, NTSC)
50mV/div.
10 μ s/div.



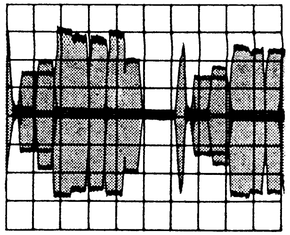
(66)

IC501 Pin ⑤ (PB, NTSC)
200mV/div.
10 μ s/div.



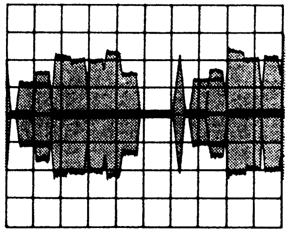
(67)

IC501 Pin ③ (PB, NTSC)
50mV/div.
10 μ s/div.



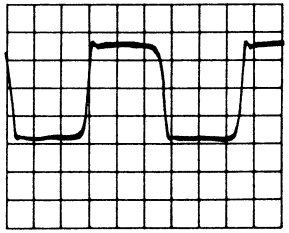
(68)

IC501 Pin ㉔ (PB, NTSC)
50mV/div.
10 μ s/div.



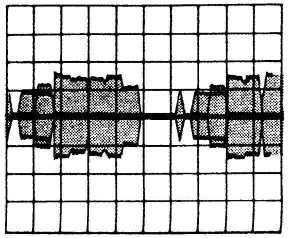
(69)

IC501 Pin ⑱ (PB, NTSC)
200mV/div.
50ns/div.



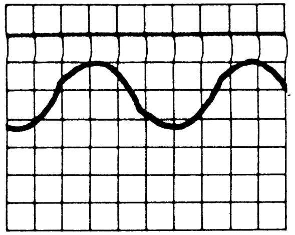
(70)

IC501 Pin ㉓ (PB, NTSC)
200mV/div.
10 μ s/div.



(71)

IC501 Pin ⑲ (PB, NTSC)
200mV/div.
50ns/div.

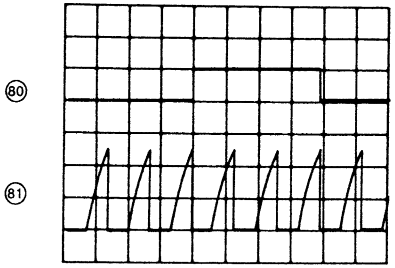


(72)

SERVO SECTION

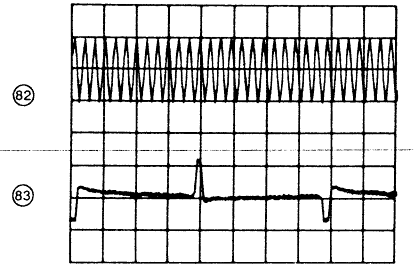
(80) IC301 Pin㊺ RF SWP (25Hz)
5V/div. (DC) ※NTSC: 30Hz
5ms/div.

(81) IC301 Pin⑥ TR MM
2V/div. (DC)
5ms/div.

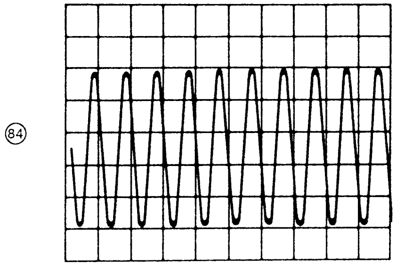


(82) IC301 Pin⑨ D FG (600Hz)
11V/div. ※NTSC: 720Hz
5ms/div.

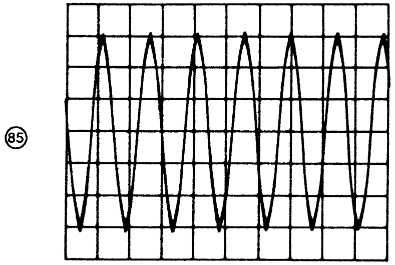
(83) IC301 Pin⑦ D PG
2V/div.
5ms/div.



(84) IC301 Pin㊲ C FG (505Hz)
500mV/div. ※NTSC: 720Hz
2ms/div.

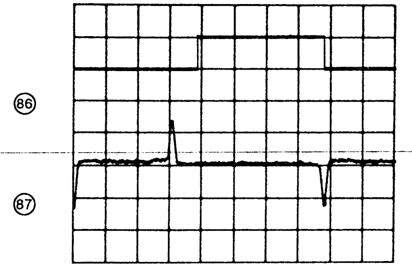


(85) IC301 Pin㊷ 3FSC (13.3008MHz)
※NTSC: 10.73MHz
100mV/div. (AC)
50ns/div.



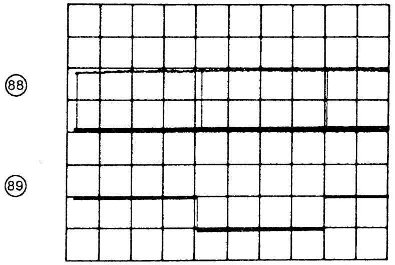
(86) IC301 Pin㊺ RF SWP
5V/div. (DC)
5ms/div.

(87) IC301 Pin㊱ CTL
1V/div. (AC)
5ms/div.



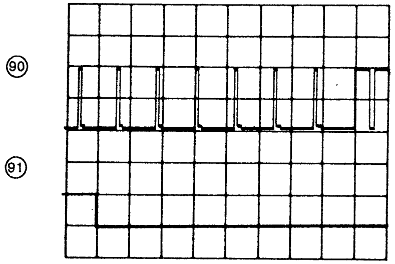
(88) IC301 Pin㊿ COMP SYNC
2V/div.
5ms/div.

(89) IC301 Pin㊺ RF SWP
5V/div.
5ms/div.



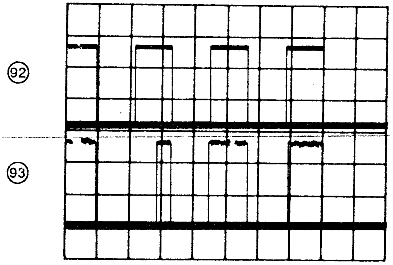
(90) IC301 Pin㊿ COMP SYNC
2V/div.
50μs/div.

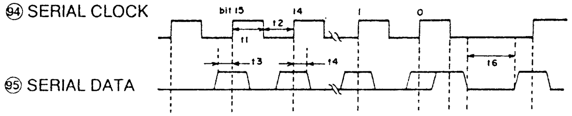
(91) IC301 Pin㊺ RF SWP
5V/div.
50μs/div.



(92) IC301 Pin(54) S CLK
2V/div. (DC)
1ms/div.

(93) IC301 Pin(53) S DATA
2V/div. (DC)
1ms/div.

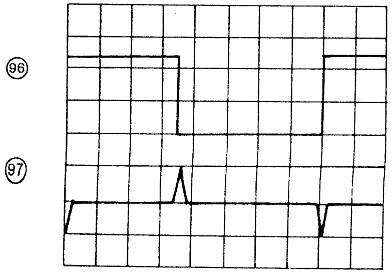




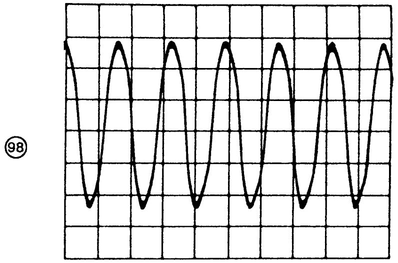
※SERVO DATA COMPONENT 64 BIT AND
16 BIT FLOW EACH 4 TIMES. 64 BIT
TRANSMIT ONE AFTER ANOTHER

(96) IC301 Pin(56) CTLP
2V/div.
5ms/div.

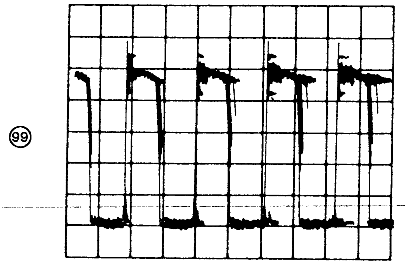
(97) IC301 Pin㊱ CTL
1V/div.
5ms/div.



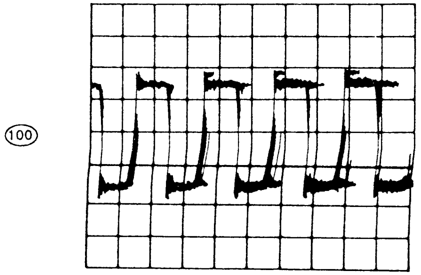
(98) IC201 Pin㉕ EX
1V/div. (AC)
100ns/div.



(99) T101 Pin④
5V/div. (DC)
2μs/div.



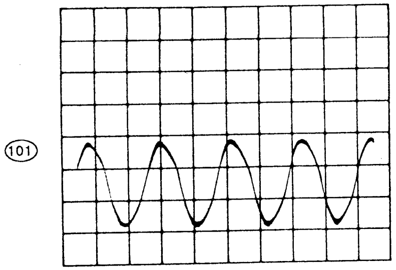
(100) T101 Pin①
2V/div. (DC)
2μs/div.



MICON SECTION

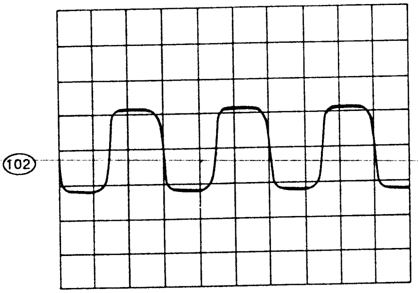
PWM OUTPUT FOR MICON CLOCK OR TUNING

IC901 Pin㉛ 4.19MHz (For MAIN)
2V/div.
0.1 μs/div.



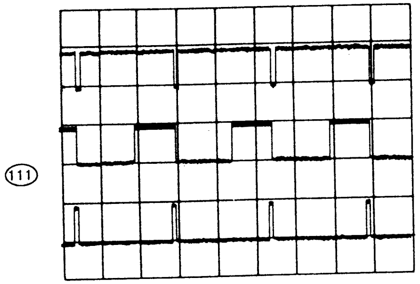
FOR CLOCK

IC901 Pin㉞ 32.768kHz (For CLOCK)
2V/div. (DC)
10 μs/div.



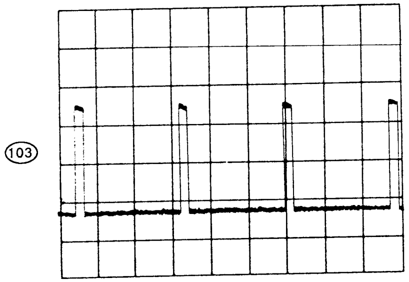
PWM VARIATION OF TUNER UP FROM TUNER V_L BAND

IC901 Pin㉙
5V/div.
100 μs/div.

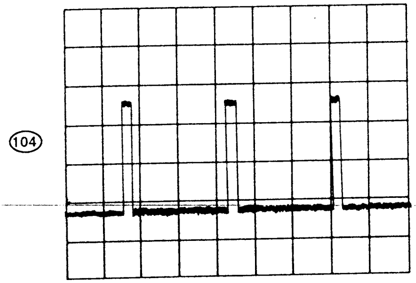


MATRIX FOR FL LIGHT OR KEY MATRIX OUTPUT

IC901 Pin㊵
10V/div.
2ms/div.

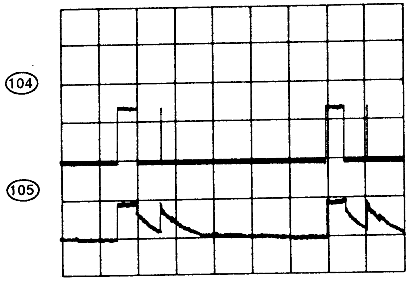


IC901 Pin④
10V/div.
2ms/div.



IC901 Pin④
20V/div.
1ms/div.

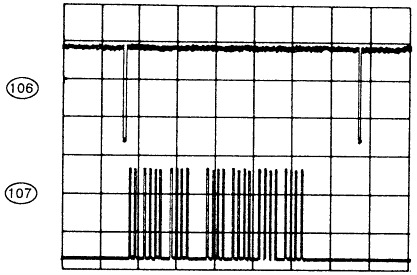
D901 K
5V/div.
1ms/div.



COMMUNICATION FOR BETWEEN E^{2}PROM AND CHANNEL DATA LOOKED MICON SIDE

IC901 Pin⑮ (ROM CS)
2V/div.
100 μs/div.

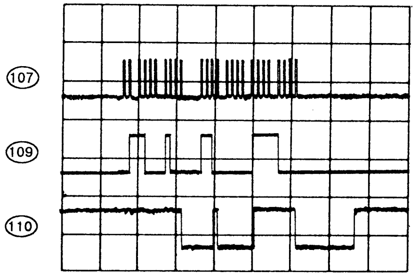
IC901 Pin⑬ (ROM CLK)
2V/div.
100 μs/div.



IC901 Pin⑬ (ROM CLK)
5V/div.
100 μs/div.

IC901 Pin⑭ (ROM DO)
5V/div.
100 μs/div.

IC901 Pin⑫ (ROM DI)
5V/div.
100 μs/div.



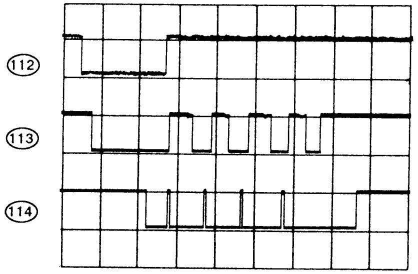
SERIAL COMMUNICATION FOR BETWEEN TIMER MICON AND MECH MICON

(MECH MICON → TIMER MICON)
EXAMPLE: END SENSOR ON ↔ OFF

IC901 Pin⑥ ($\overline{REQ}$)
5V/div.
500 μs/div.

IC901 Pin ($\overline{SYNC}$)
5V/div. ⑲
500 μs/div.

IC901 Pin⑦ ($\overline{READY}$)
5V/div.
500 μs/div.

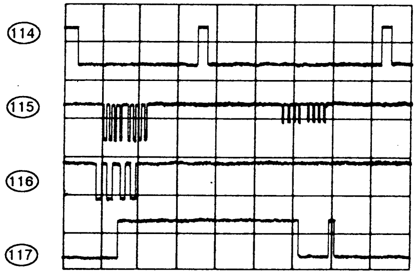


IC901 Pin⑦ ($\overline{READY}$)
5V/div.
100 μs/div.

IC901 Pin⑰ ($\overline{SCK}$)
5V/div.
100 μs/div.

IC901 Pin⑱ ($\overline{SI}$)
5V/div.
100 μs/div.

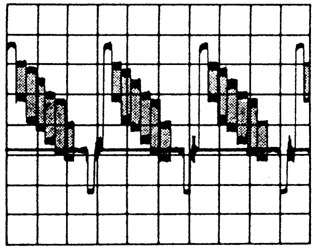
IC901 Pin⑧ ($\overline{SO}$)
5V/div.
100 μs/div.



TUNER SECTION

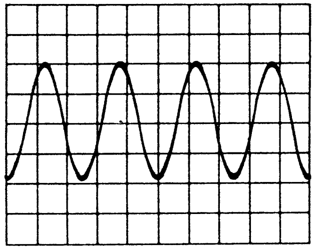
TP801 (TUNER VIDEO)
220mV/div.
20 µs/div.

(118)



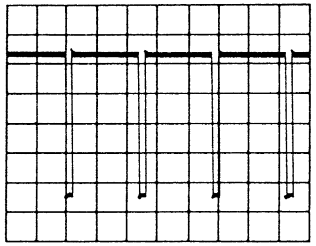
TP802 (TUNER AUDIO)
100mV/div.
1ms/div.

(119)



IC801 Pin⑦ (PNM)
1V/div.
100 µs/div.

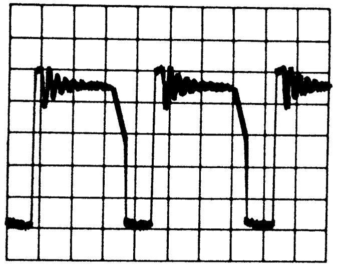
(120)



POWER SECTION

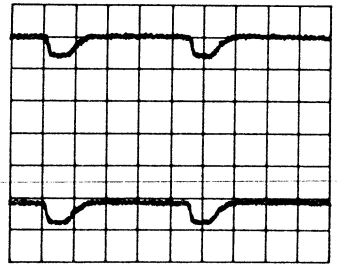
T101 Pin⑤
50Vp-p
2 µs/div.

(121)



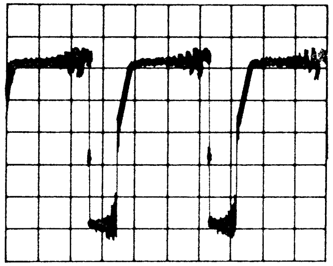
A: C107⊕
B: HIC101 Pin②
120V/div.
2 µs/div.

(122)



T101 Pin⑦
5V/div.
2 µs/div.

(123)

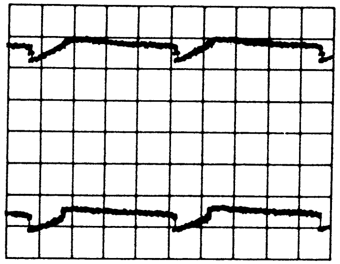


A: PC101 Pin④
5V/div.
2 µs/div.

B: PC101 Pin③
2V/div.
2 µs/div.

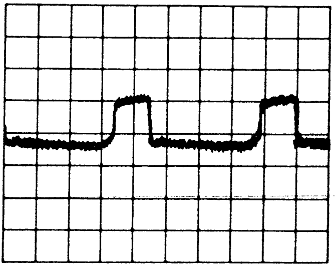
(124-A)

(124-B)



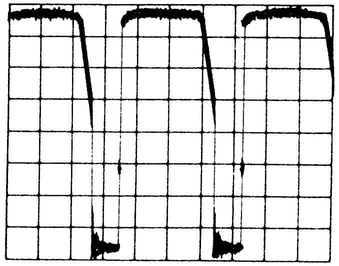
HIC101 Pin④
5V/div.
2 µs/div.

(125)



T101 Pin⑥
10V/div.
2 µs/div.

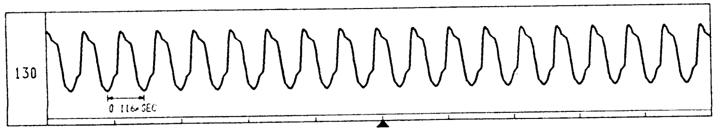
(126)



When checking waveforms (121)~(125), connect the negative (−) terminal of C104 to ground.
When checking waveforms (126), connect pin (2) of BT101 to ground.
Waveforms should be measured in PB mode and with AC 220V power input.

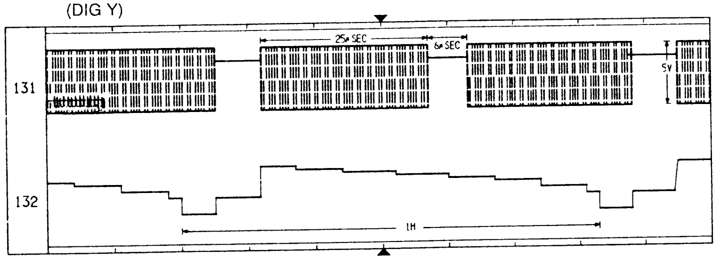
DIGITAL SECTION

(130) IC10 Pin ⑪ 2V/DIV(6.4Vp-p) 0.05 μ S/DIV

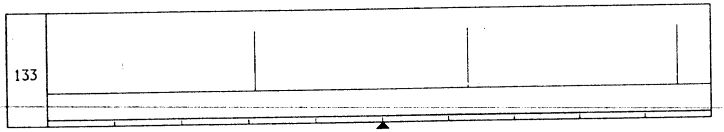


(131) IC2 Pin ⑯ 2V/DIV(6.0Vp-p) 10 μ S/DIV

(132) CN1 Pin ① 0.5V/DIV0.5 (1Vp-p) 10 μ S/DIV
(DIG Y)

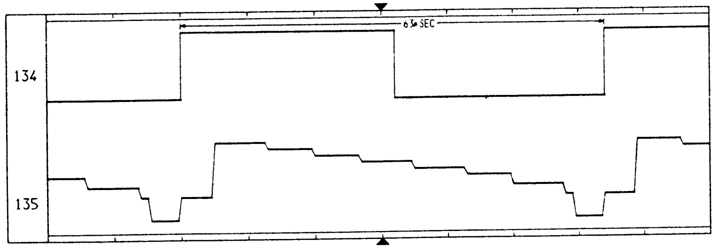


(133) IC2 Pin ⑤ 2V/DIV(5.0Vp-p) 10 μ S/DIV

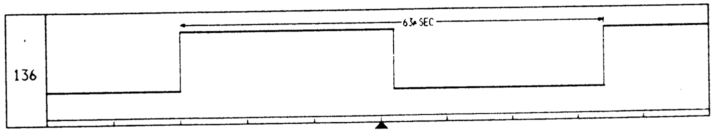


(134) IC1 Pin ㊺ 2V/DIV(5Vp-p) 10 μ S/DIV

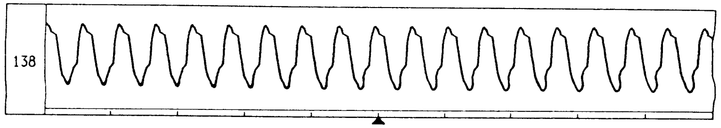
(135) CN1 Pin ① 0.5V/DIV(1Vp-p) 10 μ S/DIV
(DIG Y)



(136) IC1 Pin ㊻ 2V/DIV(5Vp-p) 10 μ S/DIV

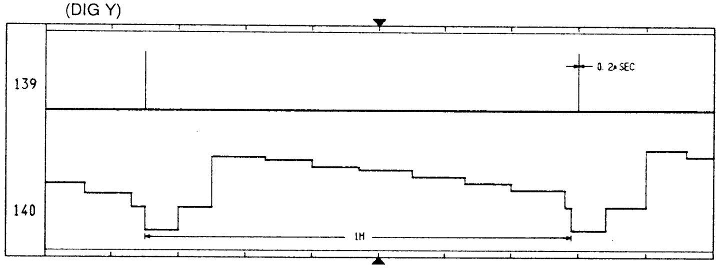


(138) IC1 Pin (64) 2V/DIV(5.0Vp-p) 0.05 μ S/DIV

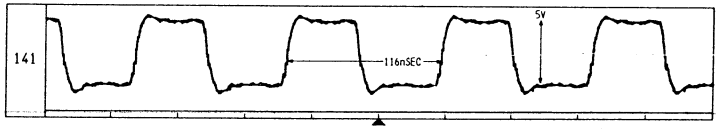


(139) IC4 Pin ㉔ 2V/DIV(5.0Vp-p) 10 μ S/DIV

(140) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 10 μ S/DIV
(DIG Y)

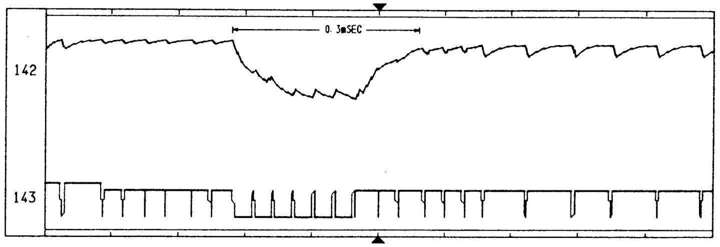


(141) IC1 Pin (68) 2V/DIV(6.4Vp-p) 0.05 μ S/DIV



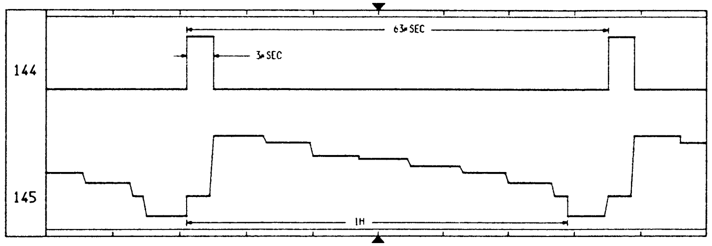
(142) IC1 Pin (82) 2V/DIV(3.0Vp-p) 100 μ S/DIV

(143) CN1 Pin ⑤ 0.5V/DIV(4.0Vp-p) 100 μ S/DIV
(DIG Y)



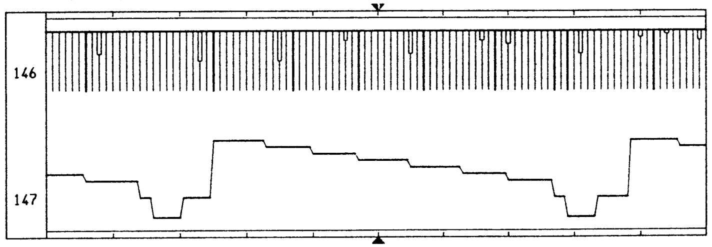
(144) IC6 Pin ⑨ 2V/DIV(5Vp-p) 10 μ S/DIV

(145) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 10 μ S/DIV
(DIG Y)



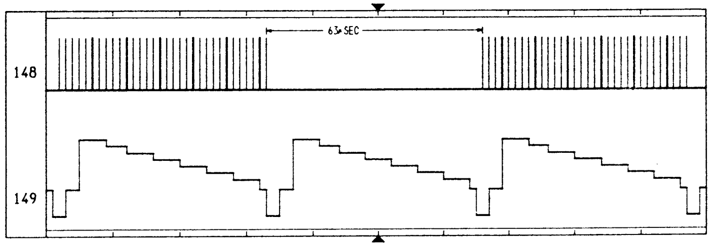
(146) IC6 Pin ⑬ 2V/DIV(5Vp-p) 10 μ S/DIV

(147) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 10 μ S/DIV
(DIG Y)

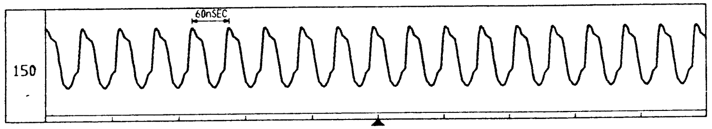


(148) IC6 Pin ⑪ , ⑫ 2V/DIV(5Vp-p) 20 μ S/DIV

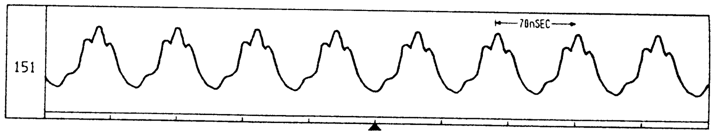
(149) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 20 μ S/DIV
(DIG Y)



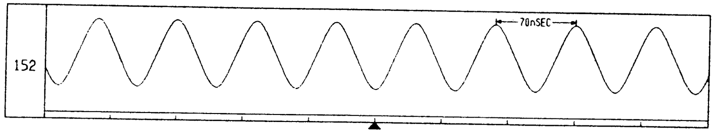
(150) IC1 Pin ㊾ 2V/DIV(7.2Vp-p) 0.05 μ S/DIV



(151) IC4 Pin ⑩ 0.5V/DIV(0.9Vp-p) 0.05 μ S/DIV

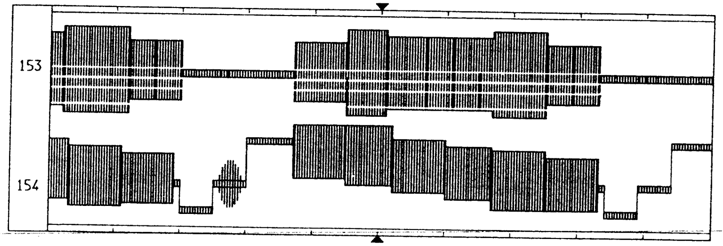


(152) IC4 Pin ⑫ 2V/DIV(0.8Vp-p) 0.05 μ S/DIV



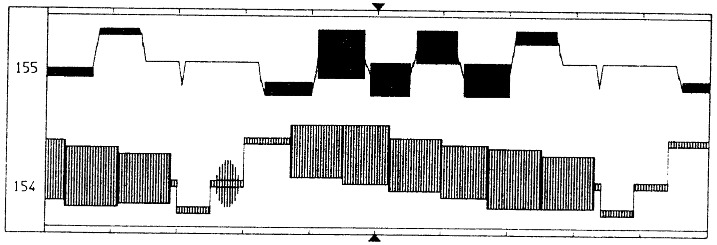
(153) IC4 Pin ③ , ⑭ , ⑯ 0.1V/DIV(280mVp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1Vp-p) 10 μ S/DIV



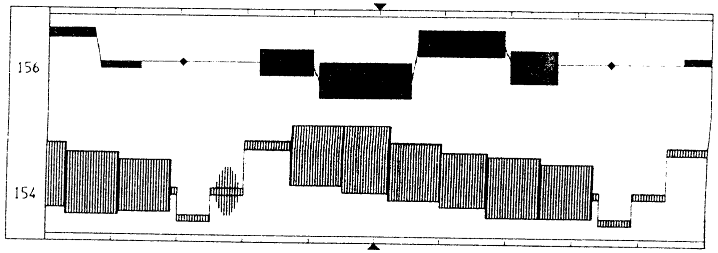
(155) IC4 Pin ⑲ 2V/DIV(1.2Vp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV



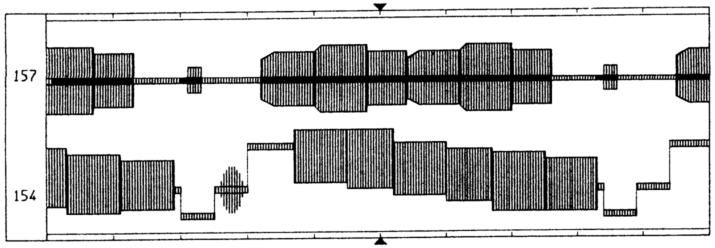
(156) IC4 Pin ⑳ 2V/DIV(1.5Vp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV



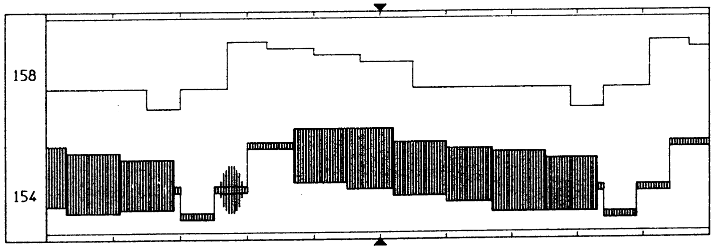
(157) IC9 Pin ⑤ 2V/DIV(1.1Vp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV

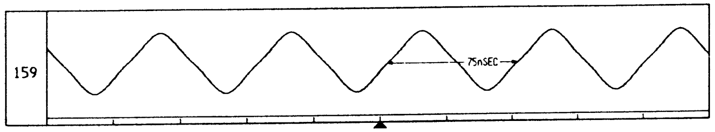


(158) IC10 Pin ⑥ 1V/DIV(0.6Vp-p) 10 μ S/DIV

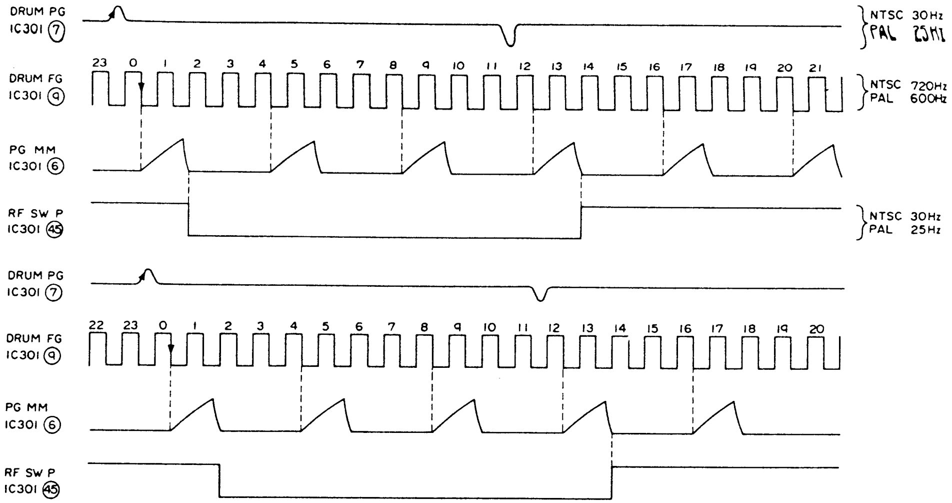
(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV



(159) IC19, 20 Pin ③ 0.5V/DIV(0.3Vp-p) 0.05 μ S/DIV



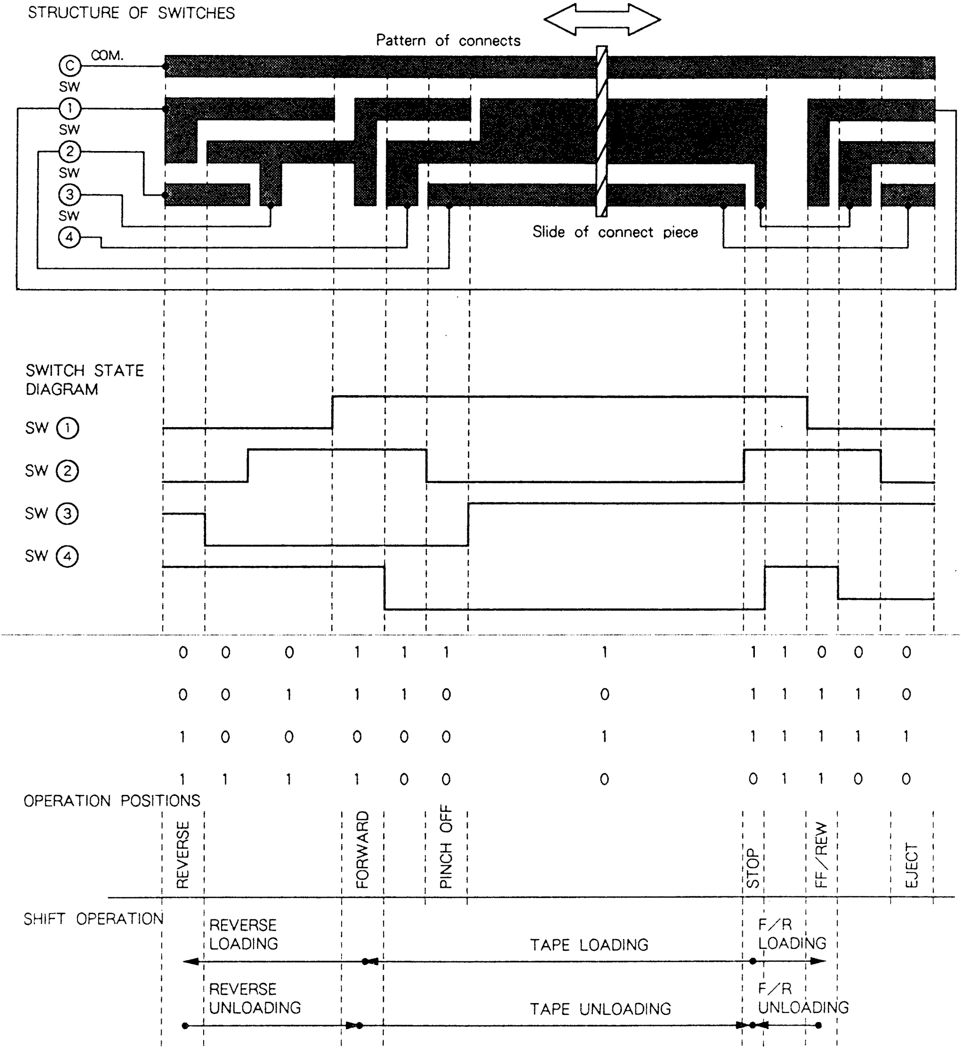
DRUM SERVO SYSTEM TIMING CHART


DRUM PG IC301 ⑦
NTSC 30Hz
PAL 25Hz
23 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
DRUM FG IC301 ⑨
NTSC 720Hz
PAL 600Hz
PG MM IC301 ⑥
RF SW P IC301 (45)
NTSC 30Hz
PAL 25Hz
DRUM PG IC301 ⑦
22 23 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
DRUM FG IC301 ⑨
PG MM IC301 ⑥
RF SW P IC301 (45)

SYSTEM SWITCH MODE

※ When SYSTEM CONTROL IC has run away, SYSTEM CONTROL IC will not accept any mode.

STRUCTURE OF SWITCHES


Pattern of connects
COM.
C
SW
1
SW
2
SW
3
SW
4
Slide of connect piece
SWITCH STATE DIAGRAM
SW ①
SW ②
SW ③
SW ④
0 0 0 1 1 1 1 1 1 0 0 0
0 0 1 1 1 0 0 1 1 1 1 0
1 0 0 0 0 0 1 1 1 1 1 1
1 1 1 1 0 0 0 0 1 1 0 0
OPERATION POSITIONS
REVERSE
FORWARD
PINCH OFF
STOP
FF/REW
EJECT
SHIFT OPERATION
REVERSE LOADING
TAPE LOADING
F/R LOADING
REVERSE UNLOADING
TAPE UNLOADING
F/R UNLOADING

SWITCH				Position
SW1	SW2	SW3	SW4	
0	0	1	0	Front loading, Eject
0	1	1	0	Intermediate
0	1	1	1	F.F, REW
1	1	1	1	Intermediate
1	1	1	0	Stop
1	0	1	0	Tape loading
1	0	0	0	Gear change
1	1	0	0	Intermadiate
1	1	0	1	Play (Pause)
0	1	0	1	Intermediate
0	0	0	1	Intermediate
0	0	1	1	Reset

IC DESCRIPTION

IC1, MB88202H – 1093

Pin No.	Pin Name	I/O	Description
1	LP	O	Outputs the current playback format and speed in combination with pins 13 and 14 (See the Table below).
2	–	–	Connected to IC power supply (5V).
3	–	–	
4	–	–	
5	–	–	
6	–	–	Not connected.
7	EX	I	Clock input.
8	VSS	–	Ground.
9	CTL	I	CTL signal input from servo circuit.
10	CFG	I	CFG signal input from servo circuit.
11	JOG	I	JOG mode signal input from system control circuit.
12	–	–	Not connected.
13	N/$\overline{\text{P}}$	O	Output the current playback format and speed in combination with pin 1 (see Table below).
14	S/$\overline{\text{E}}$	O	
15	RST	I	Reset signal input.
16	VCC	VCC	+5V power supply pin.

Pin No.	Pin Name	NTSC・SP	NTSC・LP	NTSC・EP	PAL・SP	PAL・LP
1	LP	L	H	L	L	H
13	NT/$\overline{\text{PAL}}$	H	H	H	L	L
14	SP/$\overline{\text{EP}}$	H	H	L	H	H

H = 5V
L = 0V

MC-Service

IC DESCRIPTION – 1

IC951, HD404302

Pin No.	Pin Name	I/O	Description
1	$KA/\overline{M}$	O	Outputs a signal which designates the auto or manual status to the mechanism microprocessor.
2	TR. CLK	O	Clock output for transferring tracking data.
3	TR. DATA	O	Playback tracking data output.
4	——	–	Fixed at "L".
5	A/D POS	O	Signal to indicate timing of V LEV A/D conversion.
6	$\overline{NLOCK}$	O	Signal to indicate that the Noise bar is out of the screen.
7	$\overline{D\ RST}$	O	Outputs a reset pulse to the noise cancel circuit to detect the position of noise.
8	TR LED	O	Outputs a tracking LED control signal.
9	——	–	Fixed at "H".
10	T MODE	I	Test mode signal input. ("H" in the test mode)
11	$AUTO/\overline{MAN}$	I	Auto tracking ON/OFF signal. ("H" in the auto mode)
12	$\overline{ACK}$	I	Signal to indicate whether or not the playback tracking data is transferred correctly.
13	A/D OUT 1	O	V LEV A/D converted value output 2^0. (LSB)
14	A/D OUT 2	O	V LEV A/D converted value output 2^1.
15	A/D OUT 3	O	V LEV A/D converted value output 2^2.
16	A/D OUT 4	O	V LEV A/D converted value output 2^3.
17	A/D OUT 5	O	V LEV A/D converted value output 2^4.
18	——	–	Fixed at "L".
19	RF SWP	I	Head switching signal.
20	DOC P	I	Receives the noise position detection signal for the noise cancel circuit.
21	GND	–	Ground.
22	AVCC	–	Power supply of A/D converter. (+5V)
23	V LEV	I	Signal to detect the video level. (analog DC)
24	——	–	Fixed at "L".
25	——	–	
26	——	–	
27	AVSS	–	Power supply of A/D converter. (Connected to Ground)
28	TRKG RST	I	Reset signal. ("H" when reset)
29	——	–	Fixed at "H".
30	X	–	Connected to a clock generator.
31	EX	–	
32	VCC	–	Power supply. (+5V)
33	$ET/\overline{BT}$	I	Fixed at "H".
34	$PAL/\overline{NTSC}$	I	PAL,NTSC switching signal. ("H" for PAL)
35	PAUSE	I	Detects "H" in the STILL mode to cancel noise.
36	JOG	I	"H" is input during CUE and REV.
37	D-PB	I	"H" is input during PLAY.
38	CTL P	I	Shaped CTL pulse input.
39	C CONT	O	Outputs a noise feed pulse to cancel noise.
40	A/D OUT 6	O	V LEV A/D converted value output 2^5.
41	A/D OUT 7	O	V LEV A/D converted value output 2^6.
42	A/D OUT 8	O	V LEV A/D converted value output 2^7. (MSB)

IC6, µ PC661

Pin No.	Pin Name	I/O	Description
1	DV_{CC}	–	Power supply of digital system.
2	D_6	O	Digital output. (LSB)
3	D_5	O	Digital output.
4	D_4	O	Digital output.
5	D_3	O	Digital output.
6	D_2	O	Digital output.
7	D_1	O	Digital output. (MSB)
8	CLK	I	Clock input.
9	CLAMP PULSE	I	Clamp pulse input.
10	SV	–	Connected to ground.
11	SU	–	Color difference signal select (B – U) U
12	SV	–	Color difference signal select (R – Y) V
13	SY	–	Luminance signal select (Y)
14	DGND	–	Ground
15	AGND	–	Ground
16	Y_{IN}	I	Luminance signal input (Y)
17	V_{IN}	I	Color difference signal input (R – Y)
18	U_{IN}	I	Color difference signal input (B – Y)
19	V_{IN}	–	Unused
20	V_{MON}	–	Unused
21	V_{RT}	–	Reference voltage (for high voltage)
22	V_{RM}	–	Reference voltage (for medium voltage)
23	V_{RB}	–	Reference voltage (for low voltage)
24	AV_{CC}	–	Power supply of analog system.

IC DESCRIPTION – 2

IC, μ PD75212CW／μ PD7516CW

Pin No.	Pin Name	I/O	Description	Active
1	D	O	Anode and key matrix scan output signals of fluorescent display.	H
2	C	O		H
3	B	O		H
4	A	O		H
5	REEL FG	I	Receives a signal from the reel sensor in the deck. Reel pulse input for the tape counter. Counts by one digit when 4 pulses are input.	L
6	$\overline{\text{REQ}}$	I	Signal to request serial communications from the mechanism microprocessor.	L
7	$\overline{\text{READY}}$	I	Signal from the mechanism microprocessor which indicates that it is ready to accept serial communications.	L
8	SO	I	Signal to input serial data from the mechanism microprocessor.	H or L
9	REMOCON	I	Remote control data input.	L
10	SYNC DET	I	Detects the H.SYNC component in the tuner signal to discriminate whether a picture is present or not. “L” is input when a picture is present.	L
11	VCR	I	Selects the “VCR” indication in the fluorescent display. “H”:indicate the VCR “L”:not indicate the VCR	H
12	ROM DI	I	Serial data input signal from the E^2PROM.	H or L
13	ROM CLK	O	Outputs a timtng pulse to write and read data to/from the E^2PROM.	H or L
14	ROM DO	O	Serial data output signal to the E^2PROM	H or L
15	ROM CS	O	Signal to request serial communication to the E^2PROM	L
16	BUZZER	O	Buzzer drive output (approx. 2KHz)	H or L
17	$\overline{\text{SCK}}$	O	Output a timing pulse to write and read data to/from the mechanism microprocessor.	L
18	SI	O	Serial data output signal to the mechanism microprocessor.	H or L
19	$\overline{\text{SYNC}}$	O	Signal to synchronize serial communication with the mechanism microprocessor.	L
20	S MUTE	O	Mutes audio signals. Outputs “H” when a broadcast is not received.	H
21	KM0	I	Key matrix scan inputs	H
22	KM1	I		H
23	KM2	I		H
24	KM4	I		H
25	DELAY TIME	I	Delays the rise time of S MUTE. “H”: Delays the rise time. “L”: Normal.	H
26	AFT H	I	AFT voltage input. “L” is input when the AFT voltage becomes positive with respect to the reference value.	L
27	AFT L	I	AFT voltage input. “L” is input when the AFT voltage becomes negative with respect to the reference value.	L
28	——	–	Unused	–
29	PPO	O	Tuning voltage control output.	H or L
30	4. 19MHz	I	A ceramic oscillator which generates a main system clock signal (4.19MHz) is connected.	–
31	4. 19MHz	O		
32	GND	–	Ground	–
33	32. 768KHz	I	A crystal oscillator which generates a sub-system clock signal (32.768KHz) is connected.	–
34	32. 768KHz	O		
35	PAL LED	O	Outputs “H” when the video broadcast system is PAL.	H
36	MESECAM LED	O	Outputs “H” when the video broadcast system is MESECAM.	H
37	NTSC3. 58	O	Outputs “H” when the video broadcast system is NTSC3.58.	H
38	NTSC4. 43	O	Outputs “H” when the video broadcast system is NTSC4.43.	H
39	$\overline{\text{RST}}$	I	System reset input.	L
40	G10	O	Grid signals of th fluorescent	H
41	G9	O		H
42	G8	O		H
43	G7	O		H
44	G6	O		H
45	G5	O		H
46	G4	O		H
47	G3	O		H
48	G2	O		H
49	G1	O		H
50	K. MUTE	O	Mutes audio signal. Outputs “H” momentarily to erase switching noise when the tuner is operated.	H
51	AFT D	O	Turns the AFT of the circuit on and off. “H”: OFF “L”: ON	L
52	BAND1	O	Outputs to select the tuned band. BAND1 | BAND2 | BAND L | L | L L | H | H H | L | U H | H | X X=(not output)	
53	BAND2	O		
54	N. C	–	Unused	–
55	N. C	–	Unused	–
56	EVER–24V	–	Pull-down resistors of the FIP controller/driver are connected.	–
57	EVER–4V	–	Supplies power to the output buffer of the FIP controller/driver.	–
58	J	O	Anode signals of fluorescent display.	H
59	I	O		H
60	H	O	Anode and key matrix scan output signals of fluorescent display	H
61	G	O		H
62	F	O		H
63	E	O		H
64	EVER+5V	–	Positve power supply.	–

MC-Service

IC201, MB88515B

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th><th>Active</th></tr>
<tr><td>1</td><td>TL-F</td><td>O</td><td rowspan="2">Outputs to control the start/stop and direction of rotation of the tape threading motor.<table><tr><th>TL-F</th><th>TL-R</th><th>State</th></tr><tr><td>L</td><td>L</td><td>Stops</td></tr><tr><td>H</td><td>L</td><td>Rotates forward</td></tr><tr><td>L</td><td>H</td><td>Rotates in reverse</td></tr><tr><td>H</td><td>H</td><td>Braking to stop</td></tr></table></td><td>H</td></tr>
<tr><td>2</td><td>TL-R</td><td>O</td><td>H</td></tr>
<tr><td>3</td><td>CM-F</td><td>O</td><td rowspan="2">Outputs to control the start/stop and direction of rotation of the capstan motor.<table><tr><th>CM-F</th><th>CM-R</th><th>State</th></tr><tr><td>L</td><td>L</td><td>Stops</td></tr><tr><td>H</td><td>L</td><td>Rotates forward</td></tr><tr><td>L</td><td>H</td><td>Rotates in reverse</td></tr><tr><td>H</td><td>H</td><td>Braking to stop</td></tr></table></td><td>H</td></tr>
<tr><td>4</td><td>CM-R</td><td>O</td><td>H</td></tr>
<tr><td>5</td><td>A MUTE</td><td>O</td><td>Muting of audio signals.
Outputs “H” during trick play. When switching between the recorded signal and EE signal, this pin outputs “H” for the specified period before and after the inversion of the EE output to eliminate switching noise.</td><td>H</td></tr>
<tr><td>6</td><td>FLASH</td><td>O</td><td>Not used.</td><td>H</td></tr>
<tr><td>7</td><td>V MUTE</td><td>O</td><td>Muting of video signals.
Outputs “H” when the power is turned off and “L” when it is turned on. When the power is switched from OFF to ON, however, this pin outputs “H” for the specified period to switch and then outputs “L”.</td><td>H</td></tr>
<tr><td>8</td><td>$\overline{EE}$</td><td>O</td><td>Switches the video output between the external input signal and tape playback signal.
“H”: Tape playback signal
“L”: External input signal</td><td>L</td></tr>
<tr><td>9</td><td>$\overline{ACK}$</td><td>O</td><td>Serial communication reception complete signal from the tracking microprocessor.
Outputs “H” during serial communication and “L” when reception is completed. Continues to output “H” when reception is not completed due to an error in reception, etc.</td><td>L</td></tr>
<tr><td>10</td><td>P-ON</td><td>O</td><td>Outputs “H” during power on to control the power circuit of the VCR.</td><td>H</td></tr>
<tr><td>11</td><td>PAL/$\overline{NTSC}$</td><td>O</td><td>Output to switch between PAL and NTSC video signals.
“H”: PAL
“L”: NTSC</td><td>–</td></tr>
<tr><td>12</td><td>TRKG RST</td><td>O</td><td>Tracking microprocessor reset signal.
Outputs a pulse to reset the tracking microprocessor.</td><td>H</td></tr>
<tr><td>13</td><td>PLAY</td><td>O</td><td>Outputs “H” during the PLAY, STILL, CUE, REV and S-ADV modes.</td><td>H</td></tr>
<tr><td>14</td><td>D-PAUSE</td><td>O</td><td>Outputs “H” during the STILL and S-ADV modes.</td><td>H</td></tr>
<tr><td>15</td><td>REC</td><td>O</td><td>Outputs “H” in the REC mode.
Outputs a 500ms pulse in the REC PAUSE mode.</td><td>H</td></tr>
<tr><td>16</td><td>REPEAT</td><td>O</td><td>Outputs “H” in the REPEAT mode.</td><td>H</td></tr>
<tr><td>17</td><td>D-REC</td><td>O</td><td>When switched from STOP to REC and from REC PAUSE to REC, etc. and the tape is running, this pin outputs “H” after the capstan speed is stabilized to record on the tape.</td><td>H</td></tr>
<tr><td>18</td><td>JOG</td><td>O</td><td>Outputs “H” during the CUE and REV modes.</td><td>H</td></tr>
<tr><td>19</td><td>D-PLAY</td><td>O</td><td>When switched from STOP to PLAY and from STOP to STILL, etc. and the tape is running, this pin outputs “H” to prevent the pictures from being distorted.</td><td>H</td></tr>
<tr><td>20</td><td>VCR/$\overline{TV}$</td><td>–</td><td>Not used.</td><td>–</td></tr>
<tr><td>21</td><td>PAL</td><td>O</td><td>Outputs “H” in the PAL mode.</td><td>H</td></tr>
<tr><td>22</td><td>MESECAM</td><td>O</td><td>Outputs “H” in the MESECAM mode.</td><td>H</td></tr>
<tr><td>23</td><td>NTSC3.58</td><td>O</td><td>Outputs “H” in the NTSC 3.58 mode.</td><td>H</td></tr>
<tr><td>24</td><td>NTSC4.43</td><td>O</td><td>Outputs “H” in the NTSC 4.43 mode.</td><td>H</td></tr>
<tr><td>25</td><td>EX</td><td>I</td><td rowspan="2">Connected to a clock oscillator (6MHz) which generates a system clock pulse.</td><td rowspan="2">–</td></tr>
<tr><td>26</td><td>X</td><td>O</td></tr>
<tr><td>27</td><td>$\overline{RST}$</td><td>I</td><td>System reset input.</td><td>L</td></tr>
<tr><td>28</td><td>SO</td><td>–</td><td>Not used.</td><td>–</td></tr>
<tr><td>29</td><td>SI</td><td>–</td><td>Not used.</td><td>–</td></tr>
<tr><td>30</td><td>$\overline{SCK}$</td><td>–</td><td>Not used.</td><td>–</td></tr>
<tr><td>31</td><td>REMOCON</td><td>I</td><td>Remote control data input.</td><td>L</td></tr>
<tr><td>32</td><td>VSS</td><td>–</td><td>Connected to Ground.</td><td>–</td></tr>
<tr><td>33</td><td>S. CLK</td><td>O</td><td>Outputs a timing pulse to the servo IC to transfer serial data.</td><td>–</td></tr>
<tr><td>34</td><td>S. DATA</td><td>O</td><td>Transfers serial data to the servo IC.</td><td>–</td></tr>
<tr><td>35</td><td>$\overline{REQ}$</td><td>–</td><td>Not used.</td><td>–</td></tr>
<tr><td>36</td><td>$\overline{READY}$</td><td>–</td><td>Not used.</td><td>–</td></tr>
<tr><td>37</td><td>KI0</td><td>I</td><td rowspan="4">Key matrix scan inputs.</td><td>L</td></tr>
<tr><td>38</td><td>KI1</td><td>I</td><td>L</td></tr>
<tr><td>39</td><td>KI2</td><td>I</td><td>L</td></tr>
<tr><td>40</td><td>KI3</td><td>I</td><td>L</td></tr>
<tr><td>41</td><td>$\overline{SYNC}$</td><td>I</td><td>Signal to synchronize serial communications with the timer microprocessor.</td><td>L</td></tr>
<tr><td>42</td><td>$\overline{VISS}$</td><td>I</td><td>Detects a VISS signal.</td><td>L</td></tr>
<tr><td>43</td><td>AVSS</td><td>–</td><td>Connected to Ground.</td><td>–</td></tr>
<tr><td>44</td><td>AVR–</td><td>–</td><td>Connected to Ground.</td><td>–</td></tr>
<tr><td>45</td><td>AVR+</td><td>–</td><td>Positive power terminal, connected to SS5V.</td><td>–</td></tr>
<tr><td>46</td><td>AVCC</td><td>–</td><td>Positive power terminal, connected to SS5V.</td><td>–</td></tr>
<tr><td>47</td><td>D-STILL</td><td>O</td><td>Outputs “H” during STILL and STILL-ADVANCE.</td><td>H</td></tr>
<tr><td>48</td><td>$\overline{LINE}$/TUN(A)</td><td>O</td><td>Switches the audio input.
“H”: Tuner audio
“L”: Line audio</td><td>–</td></tr>
<tr><td>49</td><td>KO5</td><td>O</td><td rowspan="6">Key matrix scan output signals.</td><td rowspan="6">–</td></tr>
<tr><td>50</td><td>KO4</td><td>O</td></tr>
<tr><td>51</td><td>KO3</td><td>O</td></tr>
<tr><td>52</td><td>KO2</td><td>O</td></tr>
<tr><td>53</td><td>KO1</td><td>O</td></tr>
<tr><td>54</td><td>KO0</td><td>O</td></tr>
<tr><td>55</td><td>TOP S.</td><td>I</td><td>Receives a tape start detection signal.
Inhibits switching to the reverse direction. When this signal is input during reverse running, it shifts the VCR to the stop mode.</td><td>H</td></tr>
<tr><td>56</td><td>END S.</td><td>I</td><td>Receives a tape end detection signal.
Inhibits switching to the forward direction. When this signal is input during forward running, it shifts the VCR to the auto rewind mode.</td><td>H</td></tr>
<tr><td>57</td><td>RF SWP.</td><td>I</td><td>Receives drum rotation pulses.
When the output of pulses is stopped for 2 seconds during an operation mode in which the drum rotates due to an anomaly in tape, mechanism, etc., the VCR is switched off automatically to protect the tape.</td><td>–</td></tr>
</table>

Pin No.	Pin Name	I/O	Description	Active
58	REEL S.	I	Receives a signal from the reel sensor in the mechanism. When the output of pulses is stopped for 2 seconds during an operation mode in which the reel rotates due to anomaly in tape, mechanism, etc., the VCR is switched off automatically to protect the tape.	–
59	(PULL UP)	–	Not used.	–
60	$\overline{\text{C}}\cdot\overline{\text{START}}$	I	Connected to a cassette start switch in the cassette loading mechanism to perform the cassette-in operation (loading). When this signal is detected during eject, the capstan motor is switched to be pulse driven.	L
61	$\overline{\text{C}}-\overline{\text{IN}}$	I	Connected to a cassette-in switch in the cassette loading mechanism to detect the cassette-in status.	L
62	$\overline{\text{C}}-\overline{\text{OUT}}$	I	Connected to a cassette-out switch in the cassette loading mechanism to detect the cassette-out (eject) status. Instructs to stop the cassette-out operation (unloading).	L
63	NC	–	Not used.	–
64	VCC	–	Positive power terminal, connected to SS5V.	–

IC, MB40778

Pin No.	Pin Name	I/O	Description
1	GND	–	Connected to ground.
2	VD	–	Power supply of digital system.
3	COMP	–	Phase compensation time constant.
4	VR	I	Reference voltage input.
5	VA	–	Power supply of analog system.
6	AO	O	Analog output.
7	NC	–	Unused.
8	VA	–	Power supply of analog system.
9	VD	–	Power supply of digital system.
10	GND	–	Connected to ground.
11	CK	I	D/A converter clock input.
12~19	Dn	I	Digital data inputs. D1(MSB), D8(LSB)
20	NC	–	Unused.

IC, MB40776

Pin No.	Pin Name	I/O	Description
1	VD	–	Power supply of digital system.
2	COMP	–	Phase compensation time constant.
3	VR	I	Reference voltage input.
4	VA	–	Power supply of analog system.
5	AO	O	Analog output.
6	VA	–	Power supply of analog system.
7	VD	–	Power supply of digital system.
8	GND	–	Connected to ground.
9	CK	I	D/A converter clock input.
10~15	D1~D6	I	Digital data inputs. D1(MSB), D6(LSB)
16	GND	–	Connected to ground.

IC, LH2464 – 10

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{OE}}$	I	Output enable input.
2	DQ1	I/O	Data I/O (LSB)
3	DQ2	I/O	Data I/O
4	$\overline{\text{WE}}$	I	Write enable input.
5	$\overline{\text{RAS}}$	I	$\overline{\text{RAS}}$ input.
6~8	A4~6	I	Address inputs.
9	VCC	–	Power supply pin.
10	A7	I	Address input. (MSB)
11~14	A0~3	I	Address inputs A0. (LSB)
15	DQ3	I/O	Data I/O
16	$\overline{\text{CAS}}$	I	$\overline{\text{CAS}}$ input.
17	DQ4	I/O	Data I/O (MSB)
18	VSS	–	Connected to ground.

IC, MB87813A

Pin No.	Pin Name	I/O	Description
1	RVD	–	Unused.
2	XTEST	–	Connected to VDD.
3	VDD	–	Power supply pin.
4	VSS	–	Connected to ground.
5	DIGXAT	–	Unused.
6	MUTE	–	Connected to ground.
7~14	DAYn	O	Y D/A converter data outputs. DAY7MSB), DAY0(LSB)
15	VSS	–	Connected to ground.
16	YDACK	O	Y D/A converter clock output. (550 fH)
17	CGIN	–	Connected to ground.
18,19	XRW,XRE	–	Connected to VDD.
20~27	AAn	O	Memory A address outputs. AA7 (MSB), AA0 (LSB)
28	VDD	–	Power supply pin.
29	VSS	–	Conncted to ground.
30	XACAS	O	Memory A $\overline{CAS}$ output.
31	XARAS	O	Memory A $\overline{RAS}$ output.
32	XCE	I	R50 input.
33	SDIN	I	W50 input.
34	SCK	–	Connected to ground.
35	DIKY	–	Connected to VDD.
36~39	MADn	I/O	Memory A data bus. MAD3 (MSB), MAD0 (LSB)
40	VSS	–	Connected to ground.
41~44	MBDn	I/O	Memory B data bus.
45	XAWE	O	Memory A write enable output.
46	XBWE	O	Memory B write enable output.
47	XRAMS	–	Connected to VDD.
48	PCSYNC	–	Connected to ground.
49	PDETV	–	Connected to ground.
50	XCLR	I	Reset input.
51	XBRAS	O	Memory B $\overline{RAS}$ output.
52	XBCAS	O	Memory B $\overline{CAS}$ output.

IC, MB87813A

Pin No.	Pin Name	I/O	Description
53	VDD	–	Power supply pin.
54	VSS	–	Connected to ground.
55~62	BAn	O	Memory B address outputs. BA7 (MSB),BA0 (LSB)
63	WF	I	Write enable input.
64	YCLK	I	System main clock input. (1100 fH)
65	VSS	–	Connected to ground.
66	ADCK	O	A/D converter clock output. (1100 fH)
67	WHD	O	Write system HD pulse output.
68	WOB	O	Wobbling clock output. (550 fH)
69	VSS	–	Connected to ground.
70~75	ADn	I	A/D converter data inputs. AD5 (MSB),AD0 (LSB)
76	PPALP	–	Connected to ground.
77	PENCK	–	Connected to ground.
78	VDD	–	Power supply pin.
79	VSS	–	Connected to ground.
80	PHER	O	AFC error pulse output.
81	SPER	–	Unused.
82	DEIV	I	VD input.
83	CSYNC	I	Composite sync input.
84	JOG	I	Jog mode control input.
85	CLAMP	O	Pedestal clamp pulse output.
86	SEL Y	O	Input multiplexer Y select pulse.
87	SEL U	O	Input multiplexer U select pulse.
88	CEL V	O	Input multiplexer V select pulse.
89	ENCCK	I	Digital encode clock input. (4 fsc)
90	VSS	–	Connected to ground.
91	CDACK	O	Chroma system D/A converter clock output. (4 fsc)
92	RUXV	–	Unused.
93~98	DACn	O	Chroma system D/A converter data outputs. DAC5 (MSB),DAC0 (LSB)
99	CBLK	–	Unused.
100	RND	–	Unused.

IC, M51271FP

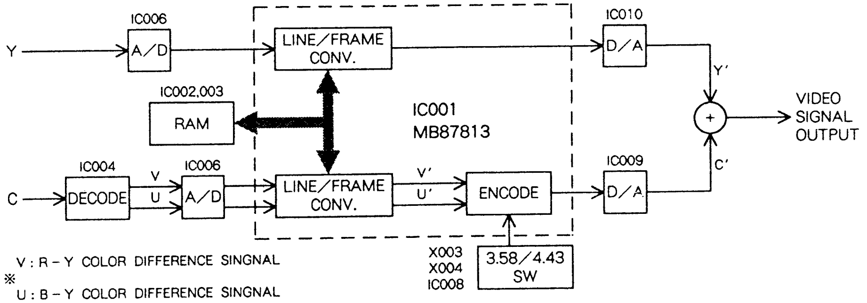
Pin No.	Pin Name	I/O	Description
1	BGP	–	Burst gate pulse phase setting time constant.
2	BGW	I	Burst gate pulse width setting voltage input.
3	CO	O	ACC chroma output.
4	AGC	I	Color saturation control voltage input.
5	CI	I	Chroma input.
6	BC	–	Input bias capacity.
7	ACCF	–	ACC filter time constant.
8	VR	–	Reference voltage.
9	APCF	–	APC filter time constant.
10	XO	C	VCXO output.
11	TINT	I	Chroma phase control voltage input.
12	XI	I	VCXO input.
13	G	–	Connected to ground.
14	UIN	I	U – axis decoder input.
15	VCC	–	Power supply pin.
16	VIN	I	V – axis decoder input.
17	N/$\overline{\text{P}}$	O	NTSC/PAL switching.
18	FSC	O	Subcarrier output.
19	UO	O	U – axis decoder output.
20	VO	O	V – axis decoder output.
21	KFC	–	Killer filter capacity.
22	KPF	–	Killer reference filter capacity.
23	BLK	–	Connected to VCC.
24	HD	I	HD pulse input.
25	VIN	I	Y input.
26	FBC	–	Sync separator feedback capacity.
27	TH	I	Sync separator slice level input.
28	SYNC	O	Composite sync output.

CIRCUIT DESCRIPTION

Explanation of Digital Conversion

Operation

The color system and number of lines/frames are different in the NTSC, PAL and MESECAM systems. To change the system, the color system and number of lines/frames are converted by the flow shown in Figure-1.



※ V : R – Y COLOR DIFFERENCE SINGNAL
U : B – Y COLOR DIFFERENCE SINGNAL

Fig.-1 Block Diagram (DC – 1 Circuit Board)

1. Line Frame Conversion

The number of lines/frames is converted by thinning or interpolating (reading twice) the lines using the field memory ICs (IC002, 003). When the horizontal frequency is the same, the number of lines and the number of frames are in inverse proportion. Since the horizontal frequency is almost the same in the PAL and NTSC systems, the number of lines is converted, thus the number of frames can also be converted.

(1) NTSC to PAL line/frame conversion

NTSC 525 lines are convertsd to PAL 625 lines by writing all lines of the input NTSC signal to the field memory (IC002, 003) as they are and reading the same line twice every 5 lines to increase the number of lines to 625.

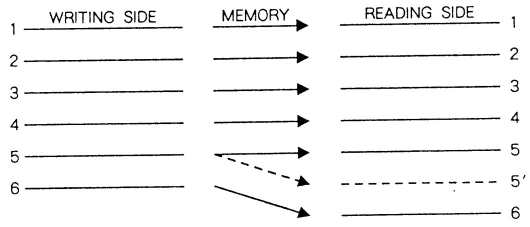


Fig.-2 Increasing the Number of Lines

(2) PAL to NTSC line/frame conversion

PAL 625 lines are converted to NTSC 525 lines by reducing the lines of the input PAL signal at a rate of one line per 6 lines and writing them to the field memory.

The lines are read continuously to decrease the number to 525 lines.

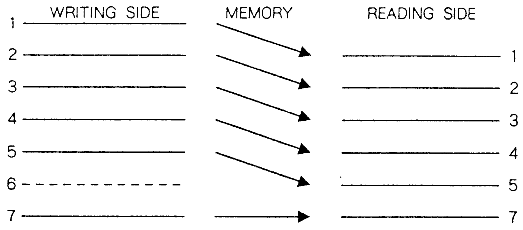


Fig.-3 Decreasing the Number of Lines

2. Color System Conversion

The subcarrier frequency is different between the 3.58/4.43 NTSC and PAL systems. Also the V-axis is inverted every 1H in the PAL system.
To convert the system, the chroma signal is once decoded by IC004 (M51271FP) according to the TV system of the output signal.

The color difference signals, U and V (the decoder outputs), are line-frame-converted and are then encoded according to the TV system.

3. Select Signal for System Conversion

The select signal is output by switching the SYSTEM SW and CONVERT OUT SW on the front panel to switch the input and output signal systems are switched as shown in Tables 1 and 2.

Input System / Select Signal	PAL	MESECAM	3.58NTSE	4.43NTSC
NT3	L	L	H	L
NT4	L	L	L	H
MES/$\overline{\text{PAL}}$	L	H	H	H

Table 1

Output System / Select Signal	NTSC	THRU	PAL
$\overline{\text{DIG PAL}}$	H	H	L
$\overline{\text{DIG NT}}$	L	H	H

Table 2

These select signals are passed through the logic circuit as shown in Figure-4 ; a select signal which is necessary for line/frame conversion and color system conversion is produced and supplied to each block.

Table 3 shows the relation between the input and output systems and select signals.

Input System	PAL			MESECAM			3.58NTSC			4.43NTSC		
Output System / Select Signal	NTSC	THRU	PAL	NTSC	THRU	PAL	NTSC	THRU	PAL	NTSC	THRU	PAL
W 50	H	H	H	H	H	H	L	L	L	L	L	L
R 50	L	H	H	L	H	H	L	L	H	L	L	H
DEC 4	H	H	H	H	H	H	L	L	L	H	H	H
$\overline{\text{NT}}$/PAL	H	H	H	H	H	H	L	L	L	L	L	L
IC 14① (4.43)	L	H	H	L	L	L	L	L	H	L	H	H
IC 17③ (3.58)	H	L	L	L	L	L	H	H	L	H	L	L
Bypass	L	H	H	L	H	H	H	H	L	L	H	L

Table 3

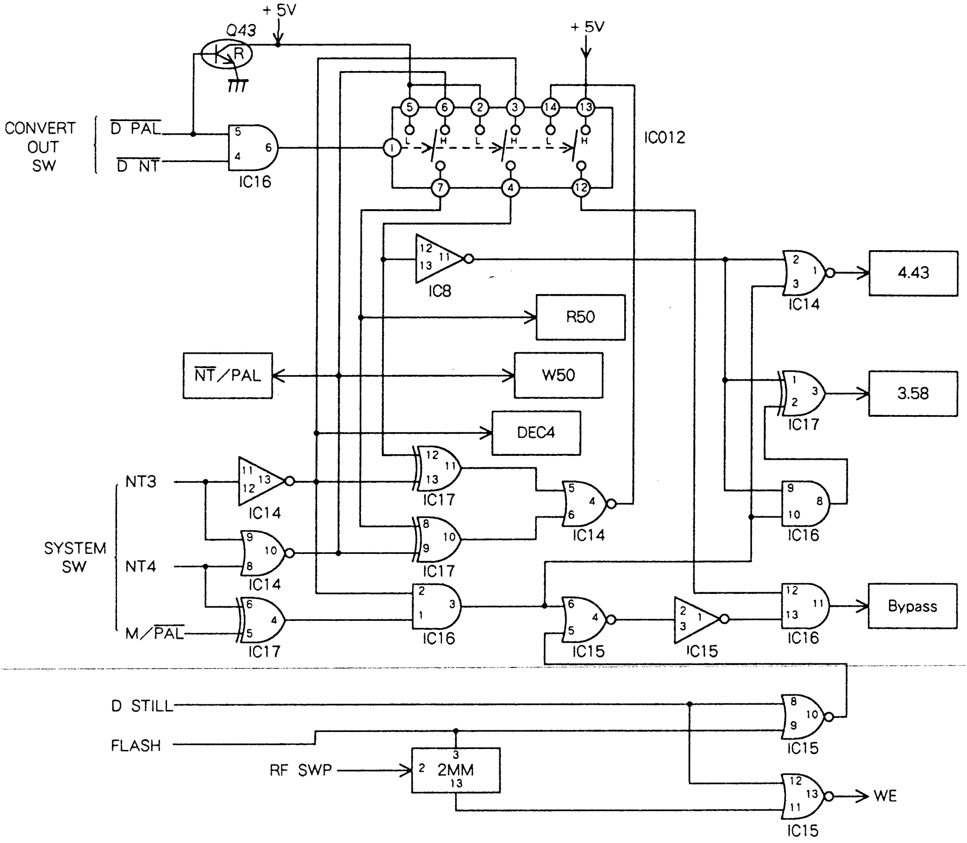
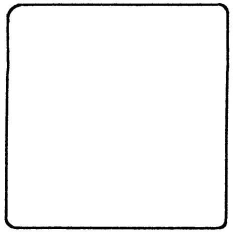

+ 5V
Q43
R
+ 5V
CONVERT
OUT
SW
D PAL
D NT
IC16
IC012
IC8
R50
NT/PAL
W50
DEC4
4.43
IC14
3.58
IC17
NT3
IC14
IC17
IC14
SYSTEM
SW
NT4
IC14
IC17
IC16
M/PAL
IC17
IC16
IC15
IC15
Bypass
IC16
D STILL
FLASH
RF SWP
2MM
IC15
WE
IC15

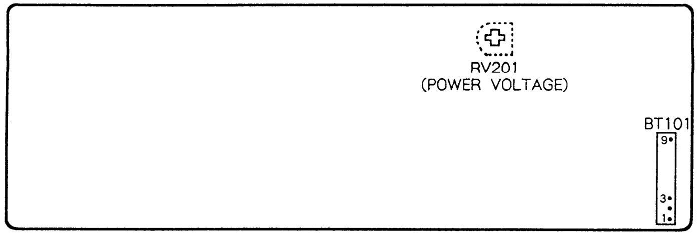
Fig. - 4

ELECTRICAL ADJUSTMENT

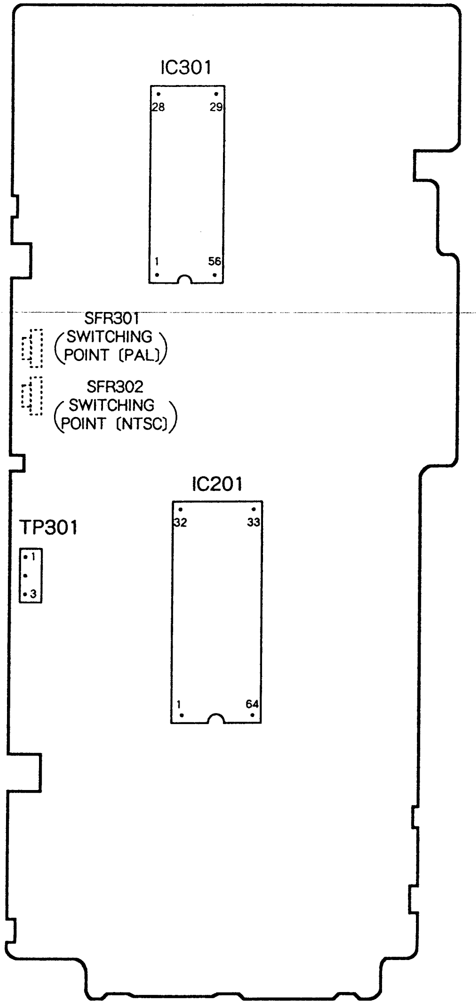
H POWER – 1 C.B



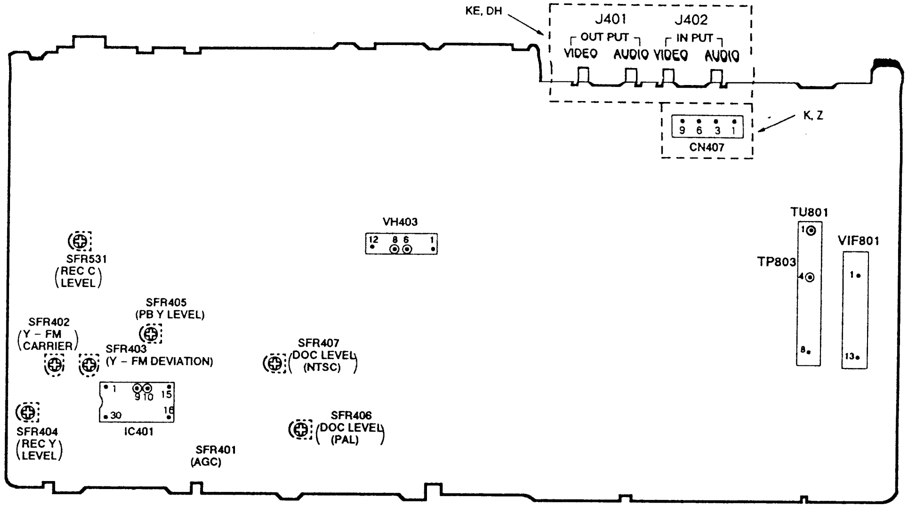
I POWER – 2 C.B


RV201
(POWER VOLTAGE)
BT101
9
3
1

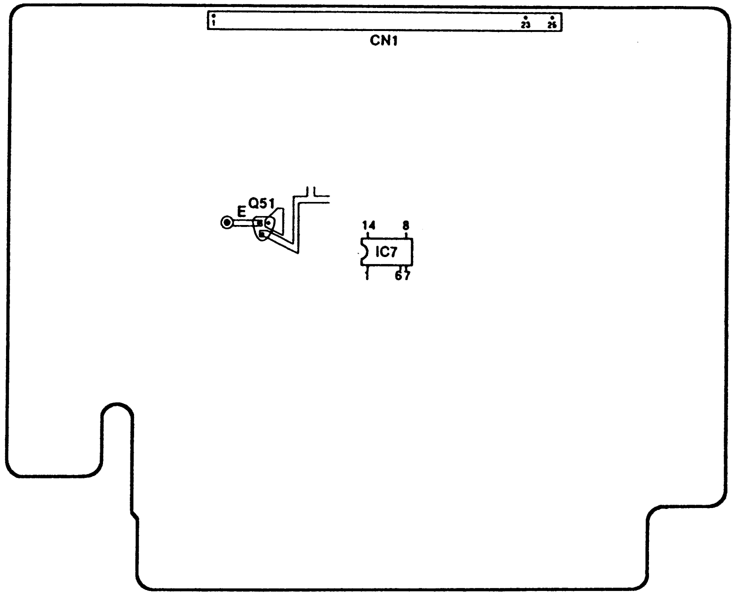
B SERVO／SYSCON C.B


IC301
28
29
1
56
SFR301
(SWITCHING POINT (PAL))
SFR302
(SWITCHING POINT (NTSC))
IC201
32
33
1
64
TP301
1
3

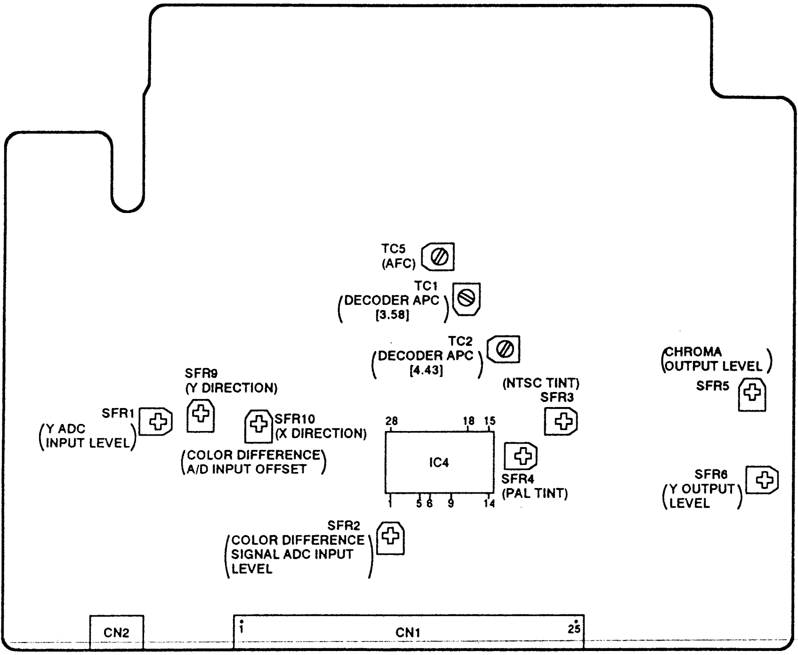
A MAIN C.B


KE, DH
J401
OUT PUT
VIDEO
AUDIO
J402
IN PUT
VIDEO
AUDIO
9 6 3 1
CN407
K, Z
TU801
1
4
8
TP803
VIF801
1
13
VH403
12 8 6 1
SFR531
(REC C LEVEL)
SFR405
(PB Y LEVEL)
SFR402
(Y – FM CARRIER)
SFR403
(Y – FM DEVIATION)
SFR407
(DOC LEVEL (NTSC))
IC401
1
9 10
15
30
16
SFR404
(REC Y LEVEL)
SFR401
(AGC)
SFR406
(DOC LEVEL (PAL))

D DIGITAL C.B (Bottom view)

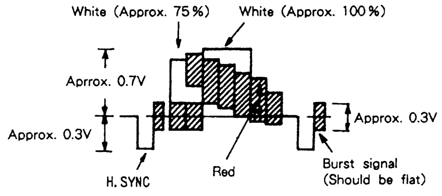

CN1
1
23
26
Q51
E
B
IC7
14
8
1
6 7

D DIGITAL C.B (Top view)

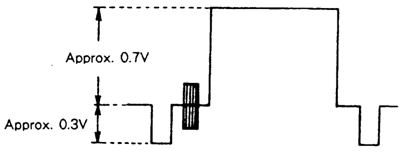

TC5
(AFC)
TC1
(DECODER APC [3.58])
TC2
(DECODER APC [4.43])
SFR9
(Y DIRECTION)
SFR1
(Y ADC INPUT LEVEL)
SFR10
(X DIRECTION)
(COLOR DIFFERENCE A/D INPUT OFFSET)
28
18
15
IC4
1
5
6
9
14
(NTSC TINT)
SFR3
SFR4
(PAL TINT)
SFR2
(COLOR DIFFERENCE SIGNAL ADC INPUT LEVEL)
(CHROMA OUTPUT LEVEL)
SFR5
SFR6
(Y OUTPUT LEVEL)
CN2
CN1
1
25

Set – up for Adjustment

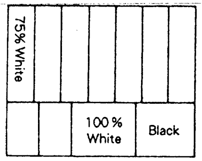
Since the video signal from the pattern generator is used for adjustment, the characteristics of this signal should be within the specificatis. Therefore, while observing the output waveform with a 75-ohm load, check that the amplitudes of the sync signal, video component and the burst signal are approx. 0.3V, 0.7V and 0.3V, and the burst amplitude is flat. Also check that the ratio in level between the burst and red signals is 0.30 : 0.66. If these values are not satisfied with the video output signal, the pattern generator should be calibrated. (Refer to the instruction manual of the pattern generator.)


White (Approx. 75%)
White (Approx. 100%)
Arrox. 0.7V
Approx. 0.3V
Approx. 0.3V
H. SYNC
Red
Burst signal
(Should be flat)

Color bar signal of the patttern generator

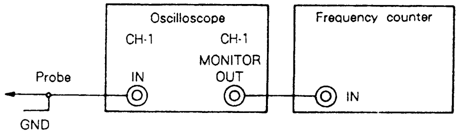

Approx. 0.7V
Approx. 0.3V

Color bar signal of all white raster


75% White
100% White
Black

TV Screen

Connection method of the measurements


Oscilloscope
CH-1
CH-1
MONITOR OUT
IN
Probe
GND
Frequency counter
IN

When the signals in parentheses [ ] are used, the adjustment values should also be set to those in parentheses [ ].

1. Power Voltage Adjustment (I POWER-2 C.B)

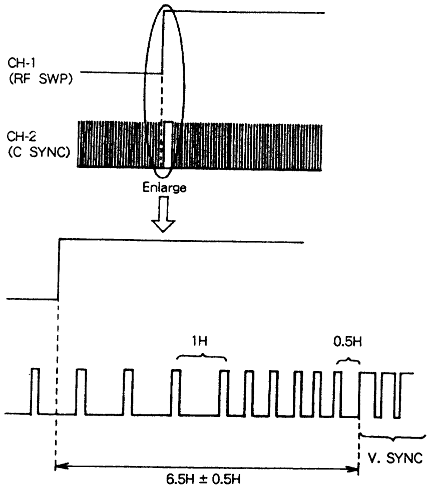
1) Connect a digital tester between BT101 pin ④ and pin ② (GND) on the POWER-2 C.B.
2) Adjust RV201 on the POWER-2 C.B so that the voltage is 12.2 ± 0.3V.

Servo Circuit Adjustment

2. Switching Point Adjustment (B SERVO/SYSCON C.B)

Oscilloscope : CH-1 : TP301 pin ② (RF SWP)
CH-2 : TP301 pin ③ (C SYNC)

1) SET the AUTO TRACKING switch to OFF and set the manual tracking to the center.
※ Load or unload a cassette or change over the SYSTEM switch to reset the tracking to the center.
2) Set the SYSTEM switch.
   PAL : Set to PAL.
   NTSC : Set to NTSC 3.58
   Set the CONV switch to THRU.
3) Playback alignment tape.
   PAL : TTV-P1
   NTSC : TTV-N1
4) Adjust to the following specification.
   PAL : SFR301
   NTSC : SFR302
* Be sure adjust PAL first

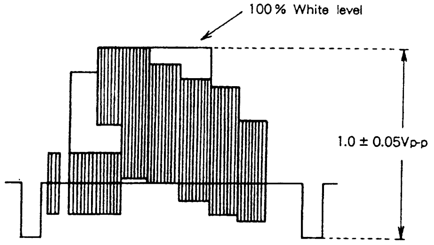


Video Circuit Adjustment

3. PB Y Level Adjustment (A MAIN C.B)

Oscilloscope : VIDEO OUT (J402, CN407 pin ⑥)

1) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
2) Playback TTV-P1 [TTV-N1] and adjust SFR405 so that the waveform is as shown in the figure below.
* Connect a monitor VIDEO OUT or terminate VIDEO OUT with 75-ohm.



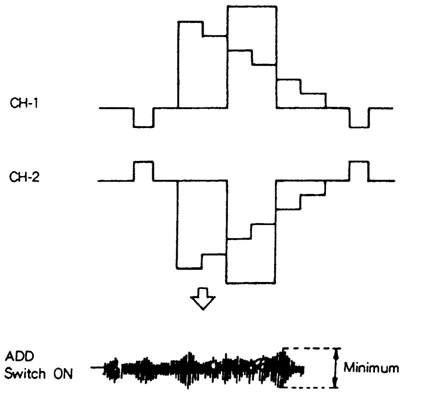
3) Set the SYSTEM switch to NTSC 3.58 [PAL].
4) Playback TTV-N1 [TTV-P1] and check that the level is within the specification.

Specification : The 100% white level is 1.0V ± 0.05Vp-p.

4. DOC Level (PAL) Adjustament (A MAIN C.B)

Oscilloscope : CH-1 : IC401 pin ⑨
CH-2 : IC401 pin ⑩

1) Playback the test tape TTV-P1.
2) Set the SYSTEM switch to PAL.
3) Turn the oscilloscope CH-2 INV switch on.
4) Turn the oscilloscope VERT MODE ADD switch on.
5) Adjust SFR406 so that the waveform becomes minimum as shown in the figure.
※ Leave the oscilloscope power range the same as that of the CH-1 and CH-2 range.

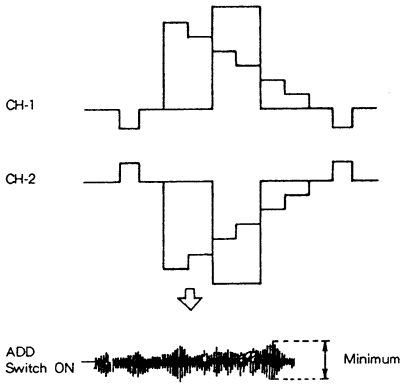


5. DOC Level (NTSC) Adjustment ([A] MAIN C.B)

Oscilloscope : CH-1 : IC401 pin ⑨
CH-2 : IC401 pin ⑩

1) Playback the test tape TTV-N1.
2) Set the SYSTEM switch to NTSC 3.58.
3) Turn the oscilloscope CH-2 INV switch on.
4) Turn the oscilloscope VERT MODE ADD switch on.
5) Adjust SFR407 so that the waveform becomes minimum as shown in the figure.

※ Leave the oscilloscope power range the same as that of athe CH-1 and CH-2 range.



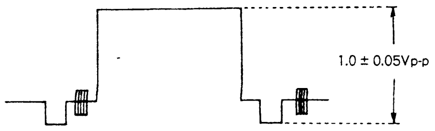
6. AGC Adjustment ([A] MAIN C.B)

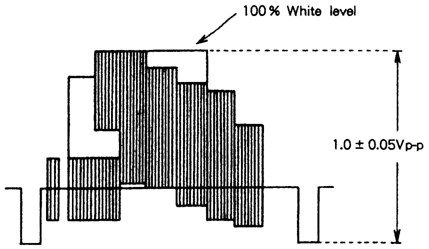
Oscilloscope : VIDEO OUT (J402, CN407 pin ⑥)

1) Apply a PAL [NTSC 3.58] color bar signal (with 100% white) to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
3) Adjust SFR401 so that the specification in the figure below is satisfied in the E-E mode. 1.0V ± 0.05Vp-p.

* Connect a monitor to VIDEO OUT or terminate VIDEO OUT with 75-ohm.

4) Apply an NTSC 3.58 [PAL] color bar signal (with 100% white) to VIDEO IN.
5) Check that the specification shown in the figure below is satisfieid in the E-E mode. 1.0V ± 0.05Vp-p.





7. Y-FM Carrier Adjustment ([A] MAIN C.B)

Oscilloscope : VH403 (HV403) pin ⑥

1) Set VIDEO IN to the no signal input state (no equipment is connected). Set the SYSTEM switch to NTSC 3.58 and CONV switch to THRU.
2) Adjust SFR402 so that the reading of the frequency counter is within the specification in the E-E mode.
Specification : 3.4MHz ± 0.05MHz
3) Set the SYSTEM switch to PAL.
4) Check that the frequency is within the specification in the E-E mode.
Specification : 3.8MHz ± 0.05MHz

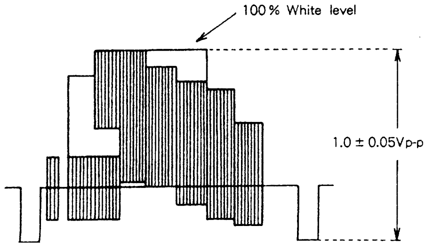
8. Y-FM Deviation Adjustment ([A] MAIN C.B)

Oscilloscope : VIDEO OUT (J402, CN407 pin ⑥)

1) Apply a PAL [NTSC 3.58] color bar signal (with 100% white) to LINE IN and record it. Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
2) Playback the recorded section and check that the level is within the specification as shown below.
3) If the level is out of the specificatin, adjust SFR403.
4) Repeat steps 1) and 2) so that the level is within the specification.

* Connect a monitor to VIDEO OUT or terminate VIDEO OUT with 75 Ω.

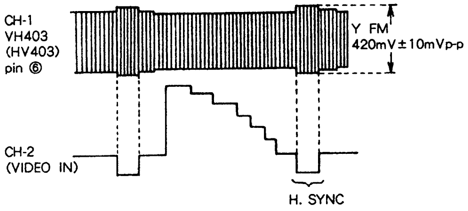
* The Y-FM carrier should have already been adjusted before this adjustment.



9. REC Y Level Adjustment ([A] MAIN C.B)

Oscilloscope : CH-1 : VH403 (HV403) pin ⑥
CH-2 : VIDEO IN (J401)

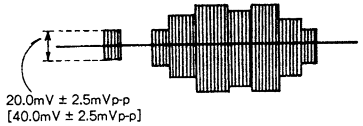
1) Apply a PAL [NTSC 3.58] color bar signal to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR404 so that the SYNC tip level is as shown in the figure in the E-E mode.



10. REC C Level Adjustment ([A] MAIN C.B)

Oscilloscope : CH-1 :VH403 (HV403) pin ⑧
CH-2 : VIDEO IN (J401)

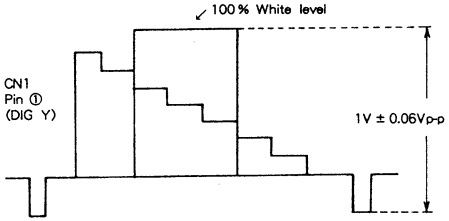
1) Apply a PAL [NTSC 3.58] color bar signal to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
3) Adjust SFR531 so that the color burst level is 20.0mV ± 2.5mVp-p [40.0mV ± 2.5mVp-p] as shown in the figure in the E-E mode.



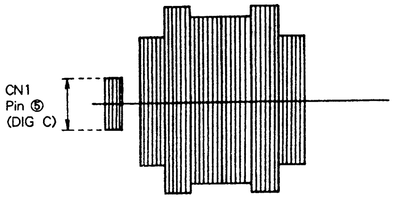
Digital Converter Circuit Adjustment

※ VIDEO circuit board adjustment should have already been adjusted before this adjustment

※ Check that the level is within the specificatin shown in the figure below is satisfied.



SYNC tip~100% white level 1Vp-p. (at input NTSC3.58)



Burst level : 286 ± 10mVp-p. (at input NTSC3.58)
300 ± 10mVp-p. (at input PAL)

11. AFC Adjustment ([D] DIGITAL C.B)

Digital voltmeter : IC7 pin ⑥ (AFC ER)

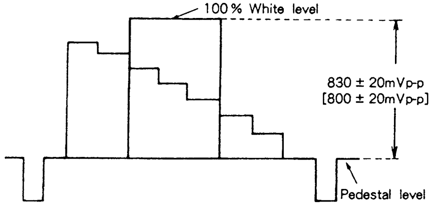
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust TC5 so the following specification values are satisfied in the E-E mode.

HV-MG350S K HV-MG330S DH, KE	···1.9V ± 0.1V
HV-MG350S Z	···2.2V ± 0.1V [2.0V ± 0.1V]

12. Y ADC Input Level Adjustment ($\boxed{D}$ DIGITAL C.B)

Oscilloscope : C6 + terinal (AD Y)

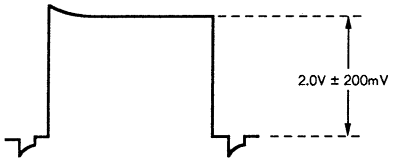
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR1 so that the level at the C6 ⊕ (AD Y) is as shown below in the E-E mode.

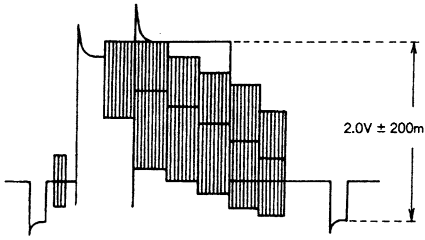


13. Y Output Level Adjustment ($\boxed{D}$ DIGITAL C.B)

Oscilloscope : CN1 pin ㉓ (DIG V)

1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and the CONV switch to NTSC [PAL].
3) Adjust SFR6 so that the level at CN1 pin ㉓ is as shown in the diagram below.

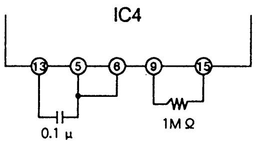




14. Decoder APC Adjustmen (3.58 MODE) ($\boxed{D}$ DIGITAL C.B)

Frequency counter : IC4 pin ⑱ (FSC)

1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58.
3) Connect a wire between IC4 pin ⑤ and pin ⑥, and a 0.1 μF capacitor between IC4 pin ⑤ and CN1 pin ⑬ (REG GND), and a 1M ohm resistor between IC4 pin ⑨ and pin ⑮ (REG 5V).
4) Adjust TC1 so that the frequency counter reads 3.579750MHz ± 50Hz.
5) Disconnect the capacitor and resistor and check that the frequency counter reads 3.579545MHz ± 5Hz or the frequency matches fsc (J401) from the pattern generator.



15. Decoder APC Adjustment (4.43MODE) ($\boxed{D}$ DIGITAL C.B)

Frequency counter : IC4 pin ⑱ (FSC)

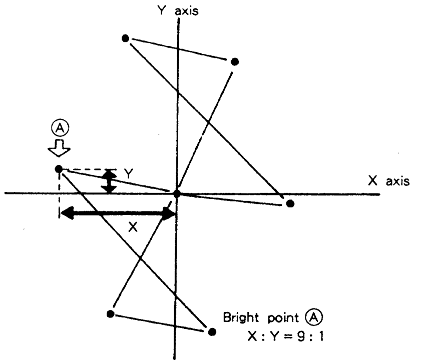
1) Apply a PAL color bar signal to the VIDEO IN jack.
2) Set the SYSTEM swich to PAL.
3) Connect a wire and a 0.1 μF capacitor and a 1M ohm resistor in the same way as in Decoder APC Adjustment (3.58 MODE).
4) Adjust TC2 so that the frequency counter reads 4.434000MHz ± 50Hz.
5) Disconnect the capacitor and resistor and check that the frequency counter reads 4.43619MHz ± 1Hz or the frequency maches fsc (J401) from the pattern generator.

16. NTSC Tint Adjustment ($\boxed{D}$ DIGITAL C.B)

Oscilloscope : CH-1 : C42⊕ terminal (AD U)
CH-2 : C39⊕ terminal (AD V)

※ Set the oscilloscope to the X-Y indication and 100mV range.

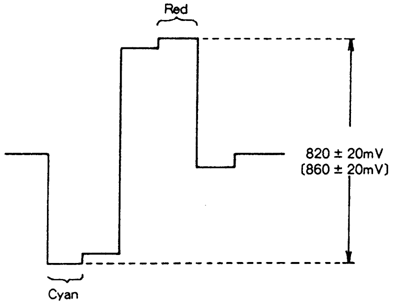
1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58.
3) Adjust SFR3 so that the level at point Ⓐ becomes as shown in the figure below.



17. Color Difference Signal ADC Input Level Adjustment ($\boxed{D}$ DIGITAL C.B)

Oscilloscope : C39⊕ terminal (AD V)

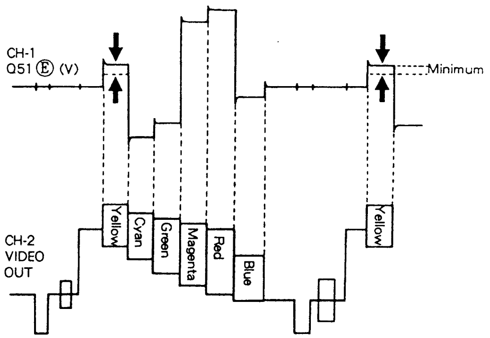
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR2 so that the amplitude from cyan to red of the waveform is as shown in the figure below.



18. PAL Tint Adjustment ($\boxed{D}$ DIGITAL C.B)

Oscilloscope : CH-1 : Q51 Ⓔ (V)
CH-2 : VIDEO OUT

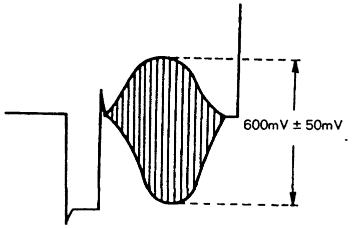
1) Apply a PAL color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL.
3) Adjust SFR4 so the variation in the yellow is minimum sa shown in the figure below.

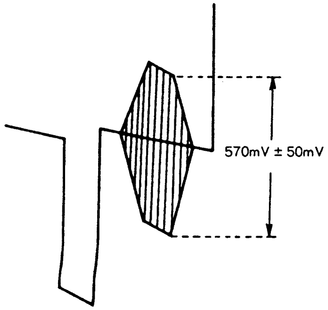


19. Chroma Output Level Adjustment ($\boxed{D}$ DIGITAL C.B)

Oscilloscope : CN1 pin ㉓ (DIG V)

1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to a PAL [NTSC 3.58] and the CONV switch to NTSC [PAL].
3) Adjust SFR5 so that the color burst level is 600mV ± 50mV [570 ± 50mV].

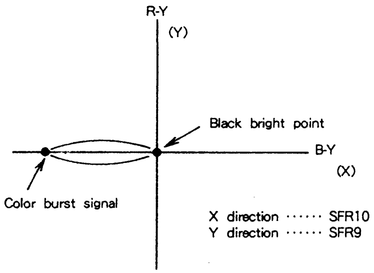




20-1. Color Difference A/D Input Offset Adjustment ($\boxed{\text{D}}$ DIGITAL C.B)

Vectorscope (PAL) : VIDEO OUT

1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58 and the CONV switch to PAL.
3) Set the gain of the vectorscope to maximum and adjust SFR9 and SFR10 so that the black bright point comes to the center of the X-Y axis.

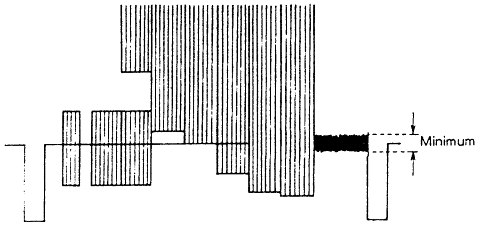

R-Y
(Y)
Black bright point
B-Y
(X)
Color burst signal
X direction ······ SFR10
Y direction ······ SFR9

20-2. Color-Difference A/D Input Offset Adjustment ($\boxed{\text{D}}$ DIGITAL C.B)

Simplified adjustment

Oscilloscope : CN1 pin ㉓ (DIG V)

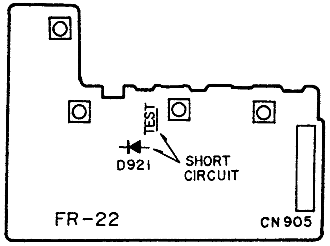
1) Apply an NTSC 3.58MHz color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58 and the CONV switch to PAL.
3) Adjust SFR9 and SFR10 so that the carrier is minimum in the black level as shown in the figure below.



SERVICE MODES

1. Starting the service mode

1) After turning the power on, use tweezers, etc. to short the jumper and D921 (anode) as shown below.


TEST
D921
SHORT CIRCUIT
FR-22
CN905

* If the power is turned on with the jumper and D921 shorted, no key input is accepted.

2) After the service mode is started, the service mode changes from 1 to 2, 3 and back to 1 each time the TEST key is pressed.

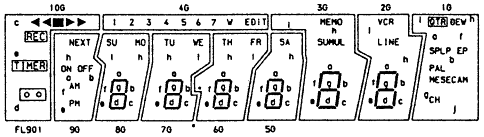
- Displays the service mode number at the 8 grid sections of the FL display.

2. Releasing the service mode

The service mode can be released by unplugging and plugging the power cord.

3. Details of service modes

1) Service mode 1
   a) Displays the following statuses in the FL display.
      Machine down
      Mechanism error
      Mechanism operation mode
      Key input code (remote control input code)
   b) Details of FL display
      Displays the statuses in the unit at the 6 grid sections of the FL display.


10G
4G
3G
2G
1G
REC
TIMER
NEXT
ON OFF
AM
PM
1 2 3 4 5 6 7 W EDIT
SU MO TU WE TH FR SA
MEMO
SUMUL
VCR
LINE
OTR DEW
SPLP EP
PAL
MESECAM
CH
FL901
9G
8G
7G
6G
5G

The mechanism error state is displayed by the system LEDs and G7 in the FL display.

LED / Error	PAL	MESECAM	NTSC 3.58	NTSC 4.43L
Loading	1	0	0	0
Unloading	0	1	0	0
Sledding	1	1	0	0
Unthreding	0	0	1	0
Mechanism intialized	1	0	1	0
Leader tape treatment	0	1	1	0
RF SWP	1	1	1	0
REEL	0	0	0	1
Mechanism position	1	0	0	1
Normal	0	0	0	0

1 : LED lights
0 : LES off

Display section	Display	Details
G2	※2	key input
G3	※2	Key input
G5	※1	Mechanism operation mode
G6	0	Normal
	1	Tape end
	2	Tape top
	3	Tape top/end
G7	0	Normal
	1	Loading error
	2	Unloading error
	3	Sledding error
	4	Unsledding error
	5	Mechanism initialization error
	6	Leader tape processing error
	7	RF SWP error
	8	REEL error
G8	1	Service Mode 1
	2	Service Mode 2
	3	Service Mode 3

Details of display sections G2 and G3.

Key name	Code	Key name	Code	Key name	Code
		TIME SET	11	1	21
STOP	02	CLEAR	12	2	22
EJECT	03	NEXT	13	3	23
POWER	04	PRGM/ CHECK	14	4	24
PAUSE	05	10	15	5	25
PLAY	06	1	16	6	26
REW	07	CH DOWN	17	7	27
F. FWD	08	CH UP	18	8	28
TIMER REC	09	BAND	19	9	29
QTR	0A	TUNNING −	1A	0	2A
REPEAT	0B	TUNNING +	1B		
REC	0C	AUTO/ MANUAL	1C	CH	2C
CLOCK/ COUNTER	0D	SYSTEM	1D		
INPUT	0E	PRESET	1E		
COUNTER MEMO	0F	TEST	1F		
COUNTER RESET	10	TV/VCR	20		

Details of display section G5.

Display section	Display	Details
G5	0	EJECT (POWER OFF)
	1	STOP (POWER OFF)
	2	EJECT
	3	STOP (tape unsledding)
	4	STAND BY
	5	FF
	6	REW
	7	PLAY
	8	CUE
	9	REV
	A	STILL
	B	STILL ADV.
	C	REC
	D	REC PAUSE
	E	FWD. SEARCH
	F	REV. SEARCH

2) Service mode 2

Disables the following sensor inputs.

ICMB88515B

TOP SENSOR	55 Pin
END SENSOR	56 Pin
RF SWP	57 Pin
REEL SENSOR	58 Pin

3) Service mode 3

Set thee clock count speed to 60 times.

PRACTICAL SERVICE FIGURE

Output Level

Video (Impedance) : 1.0 ± 0.2Vp − p
(75 Ω ± 20 %, Unbalance)
Audio (Impedance) : − 8 ± 3dB (Less then 3.3k Ω)
RF Modulated (Impedance) : KE, DH
75 ± 3dB μ V (75 Ω, Unbalance)
K, Z
73 ± 3dB μ V (75 Ω, Unbalance)

Input Level

Video (Impedance) : 0.5V~2.0V ± 0.5Vp − p
(75 Ω ± 20 %, Unbalance)
Audio (Impedance) : − 8 ± 3dB (More than 47k Ω)

TV channels received

KE, DH

Destination	VHF Low	VHF High	UHF	Signal format	
				VHF	UHF
KE	E2	E12	−	B	G
				VIF 38.0MHz, SIF 32.5MHz	
	R1~R5	R6~R11	C13~C57	D	K
				VIF 38.0MHz, SIF 31.5MHz	
DH	C1~C5	C6~C12	C13~C57	D	K
				VIF 38.0MHz, SIF 31.5MHz	
	E2~E4	E5~E12	E21~E69	I	I
				VIF 38.0MHz, SIF 31.5MHz	

K, Z

Destination	VHF Low	VHF High	UHF	Signal format	
				VHF	UHF
K	1A~S1	S2 − W (S20)	S21~US83	B	G
				VIF 38.9MHz, SIF 33.4MHz	
				D	K
				VIF 38.9MHz, SIF 32.9MHz	
				I	I
				VIF 38.9MHz, SIF 32.4MHz	
Z	E2~E4 (E2~S2)	E5~E12 (S3~S20)	E21~E69 (S21~S41)	B	G
				VIF 38.9MHz, SIF 33.4MHz	
	R1~R5 C1~C5	R6~R12 C6~C12	C13~C57	D	K
				VIF 38.9MHz, SIF 32.9MHz	
	A − C (A − C)	D − J (C2 − J)	E21~E69	I	I
				VIF 38.9MHz, SIF 32.4MHz	

S/N Ratio

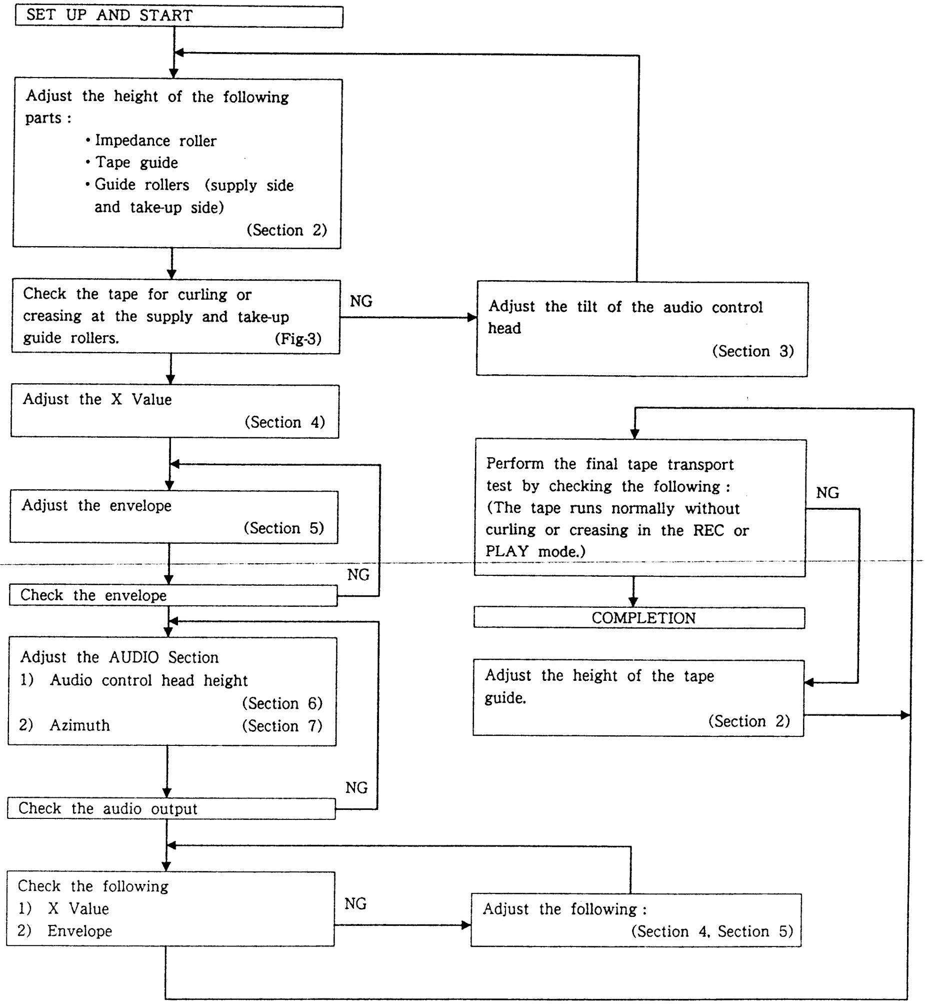
Video (SP mode) : [Test tape MVP − 08 (PB),
MVP − 09 (PB),
TDK HS − 120 (R/P)]

Signal	PB	R/P
Y-signal	More than 42dB	More than 40dB
Chrominance-Signal (AM)	More than 38dB	More than 38dB
Chrominance-Signal (PM)	More than 36dB	More than 36dB

Audio (SP mode) : More than 40dB
Audio Frequency Response :200Hz~6kHz (± 4dB)
(SP mode, Test tape A − BEX TPV − 160S)
Horizontal Resolution : More than 230 Lines
(Test tape TTV − 06T) (PAL, R/P)
More than 230 Lines
(MESECAM, R/P)
More than 220 Lines
(NSTC, PB, R/P)
Erase Ratio : More than 55dB
Bias Frequency : 70kHz ± 10 %
Tape speed : 23.39mm/sec ± 0.5 %
(SP mode) (PAL/MESECAM)
33.35mm/sec ± 0.5 % (NTSC)
Wow & Flutter : Less than 0.4 %
(Test tape TTV − P5, CCIR WTD)
F.F time : 270 ± 30sec (HS T-120)
REW time : 270 ± 30sec (HS T-120)
Back tension : KE, DH
37.5~57.5g-cm
Z, K
34.5~58.5g-cm
Loading : Less than 3sec
Unloading : Less than 3.5sec

MECHANICAL ADJUSTMENT

1. TAPE TRANSPORT ADJUSTMENT FLOWCHART


SET UP AND START
Adjust the height of the following parts :
• Impedance roller
• Tape guide
• Guide rollers (supply side and take-up side)
(Section 2)
Check the tape for curling or creasing at the supply and take-up guide rollers. (Fig-3)
NG
Adjust the tilt of the audio control head (Section 3)
Adjust the X Value (Section 4)
Adjust the envelope (Section 5)
Check the envelope
NG
Adjust the AUDIO Section
1) Audio control head height (Section 6)
2) Azimuth (Section 7)
Check the audio output
NG
Check the following
1) X Value
2) Envelope
NG
Adjust the following : (Section 4, Section 5)
Perform the final tape transport test by checking the following : (The tape runs normally without curling or creasing in the REC or PLAY mode.)
NG
COMPLETION
Adjust the height of the tape guide. (Section 2)

2. TAPE RUNNING POSITION ADJUSTMENT
(GUIDE ROLLER/TAPE GUIDE/IMPEDANCE ROLLER)

Set – up
Use the J-9 and lift the "Main circuit board". (See the SERVICE JIG AND TOOLS)

1. Perform the height adjustment for the following items to obtain the proper tape running position. (See Figure – 1)
   - ① Impedance roller
   - ② Guide roller (Supply side)
   - ③ Guide roller (Take – up side)
   - ④ Tape guide

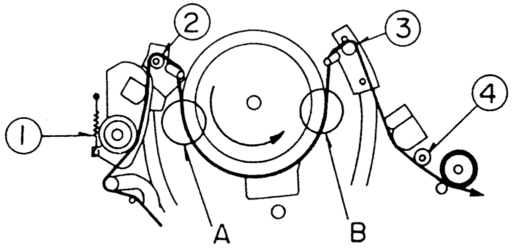
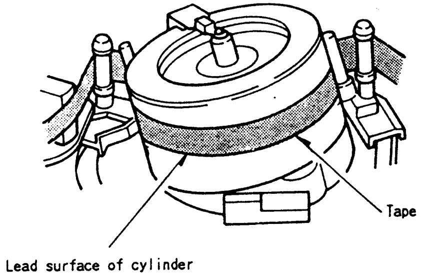


Fig. – 1

2. Load a blank tape and set VCR to the PLAY mode. Check the tape transport at points "A" and "B" as shown in Figure – 1.

3. Operate the VCR between the PLAY and STOP modes several times.

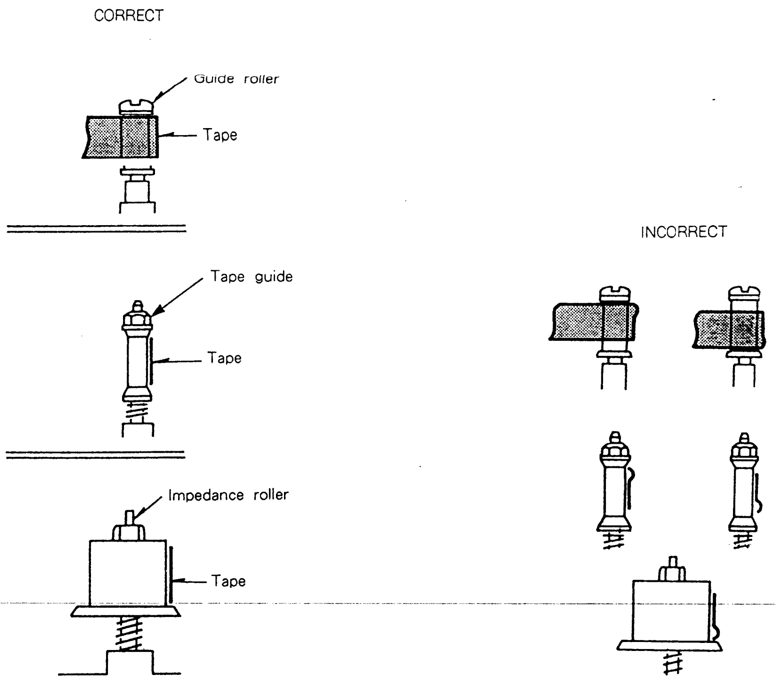
4. Observe the tape transport at the "Lead surface of the cylinder" during the PLAY mode, and confirm that the tape runs smoothly along the "Lead surface of the cylinder" without slipping downward or upward. (See Figure – 2)



Tape
Lead surface of cylinder

Fig. – 2

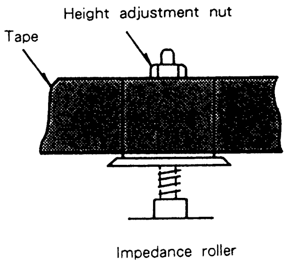
5. During loading, play and unloading, observe the tape at the supply and take – up "Guide rollers", "Tape guide" and "Impedance roller". Confirm that there is no curling or creasing etc., as shown in *Figure – 3*.



CORRECT
Guide roller
Tape
Tape guide
Tape
Impedance roller
Tape
INCORRECT

Fig. – 3

6. If any curling or creasing is noted, adjust "Tape guide roller" and "Impedance roller" first. In this case, adjust the "Impedance roller" in both PLAY and REV modes so that the tape runs as shown in Figure – 4.



Height adjustment nut
Tape
Impedance roller

Fig. – 4

7. Next, adjust the "Guide roller" height. Insert the adjustment driver (J – 2) into the "Guide roller" top. (See Figure – 5)
Adjust the height by turning the driver slightly so that the tape runs on the "Guide roller" as shown in Figure – 3, and the lower edge of the tape runs along the "Lead surface of the cylinder".

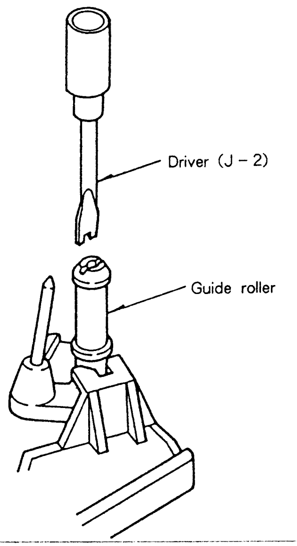

Driver (J – 2)
Guide roller

Fig. – 5

8. After completion of the supply side "Guide roller" adjustments, adjust "Tape guide" so that tape runs as shown in Figure – 6 and adjust the take – up side "Guide roller" by using the same procedures as for the supply side adjustments.
In this case, adjust the "Guide roller" height first.

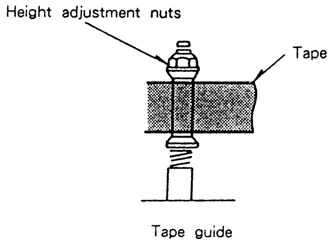

Height adjustment nuts
Tape
Tape guide

Fig. – 6

9. Confirm that there is no curling or creasing at the "Impedance roller" (Both PLAY and REV modes). If there is any curling or creasing at the "Impedance roller", adjust the same procedures of Figure – 6.

10. Finally, confirm that there is no curling or creasing at the take – up side guide roller and tape guide. If there is any curling or creasing between the take – up side "Guide roller" and the "ACE head", adjust the "ACE head".

3. AUDIO CONTROL HEAD ADJUSTMENT

1. Load a recorded tape and set the it to PLAY mode.

2. Adjust the height of the edge of the "Audio track" on the "Audio control head" by using the height adjustment nut Ⓐ and the "Tilt adjustment screw Ⓒ" so that the tape transport is smooth at the "Take – up guide pole". Align the "Audio control head" height. (See Figure – 7)

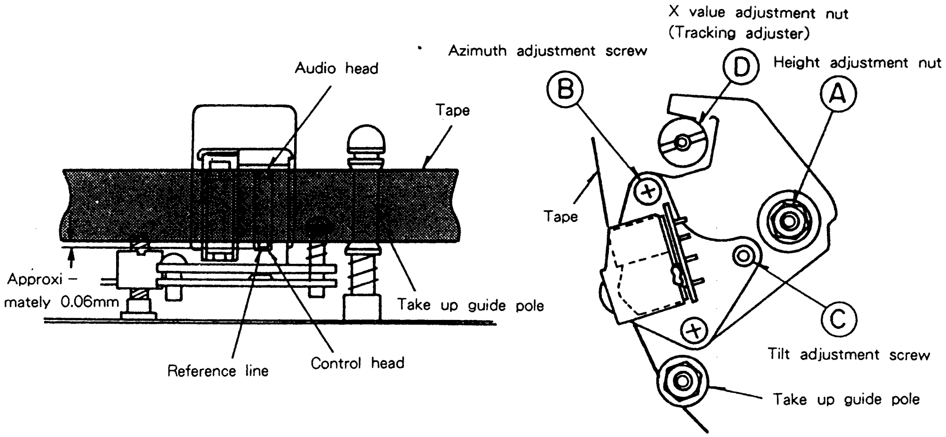

Audio head
Tape
Approxi – mately 0.06mm
Reference line
Control head
Take up guide pole
Azimuth adjustment screw
X value adjustment nut (Tracking adjuster)
Ⓓ Height adjustment nut
Ⓑ
Ⓐ
Tape
Ⓒ
Tilt adjustment screw
Take up guide pole

Fig. – 7

3. The fine adjustment is not required at this time.
The following conditions as sufficient :
   (a) Proper tape transport between the "Audio control head" and the "Take – up guide pole".
   (b) Stable SERVO system operation (proper pickup of tape's recorded control signal).

4. X VALUE ADJUSTMENT (PB FM PEAK ADJUSTMENT)

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
MAIN C. B VH403 9 pin (PB Y FM) SERVO C. B TP301 2 pin (RF SWP)	Oscilloscope	PLAY (SP) MODE Test tape TTV-P2L or TTV - N2E

ADJ. Location	ADJ. Value
X value adjustment nut	Maximum level (CH1 PB Y FM signal)

TEST EQUIPMENT CONNECTING DIAGRAMS

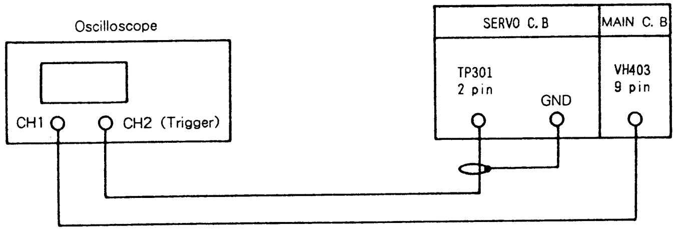

Oscilloscope
CH1
CH2 (Trigger)
SERVO C.B
MAIN C. B
TP301
2 pin
GND
VH403
9 pin

Fig. - 8

1. Connect the equipment as shown in Figure - 8.

2. Set the auto tracking switch to off and the manual tracking to the center.
* The manual tracking is set to the center when a cassette is loaded or ejected or the SYSTEM switch is changed over.

3. Adjust the "X value adjustment nut Ⓓ" for maximum PB FM Signal for CH1 by using TTV - P2L or TTV - N2E test tape. (See Figure - 9)

4. After adjusting the "X value", check that the output level of the PB FM signal for CH1 changes symmetrically by tracking switch.

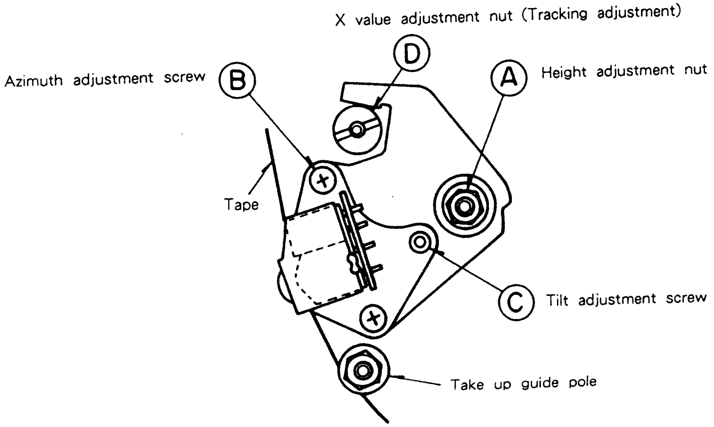

X value adjustment nut (Tracking adjustment)
Ⓓ
Azimuth adjustment screw Ⓑ
Ⓐ Height adjustment nut
Tape
Ⓒ Tilt adjustment screw
Take up guide pole

Fig. - 9

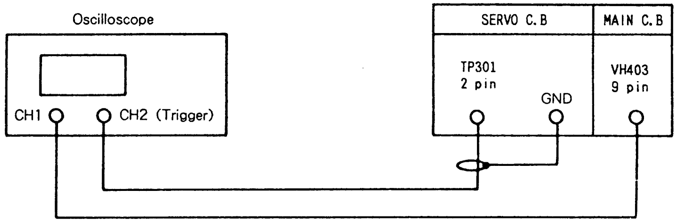
5. ENVELOPE WAVEFORM ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
MAIN C. B VH403 9 pin (PB Y FM) SERVO C. B TP301 2 pin (RF SWP)	Oscilloscope	PLAY (SP) MODE Test tape TTV-P2L or TTV-N2E

ADJ. Location	ADJ. Value
Guide rollers	Maximum level and correct wave form (PB Y FM signal)

TEST EQUIPMENT CONNECTING DIAGRAMS


Oscilloscope
CH1
CH2 (Trigger)
SERVO C.B
MAIN C.B
TP301
2 pin
GND
VH403
9 pin

1. Connect equipment as shown in Figure - 10.

2. Playback the test tape TTV - P2L or TTV-N2E.

3. The envelope waveform can be performed by adjusting the height of both the supply side and take - up side "Guide rollers". Finaly adjust the height of "Guide rollers" so that the envelope waveform is as flat as possible.

4. Manual tracking to its center position and confirm that a nearly maximum level is obtained.
Then push the Tracking SW in both directions while adjusting the height of "Guide rollers",
in order to obtain the envelope waveform which is as flat as possible.
If the tape is above or lower the helical tape position, the envelope waveform will take the shape as shown in Figure - 11 and Figure - 12.

5. Adjust for maximum flatness of the envelope waveform according to the Figure - 11 and Figure - 12.

6. After adjustment, variable in the + or - tracking, and check that the waveform changes symmetrically.

7. Check the tape curl. (Refer to Section 2)

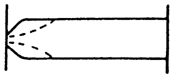
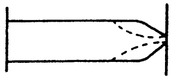
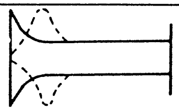
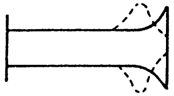
	Tape is too high	
	Supply side	Take-up side
When the tracking volume is variable in the + and − directions.		
		
Adjustment	Supply side "Guide roller" variable in the + direction (lowers "Guide roller") to flatten envelope.	Take-up side "Guide roller" variable in the + direction (lowers "Guide roller") to flatten envelope.

Fig.-11

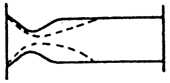
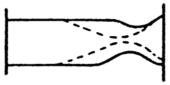
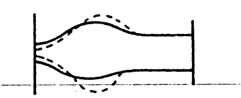
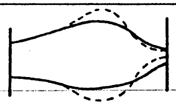
	Tape is too low	
	Supply side	Take-up side
When the tracking volume is variable in the + and − direction.		
		
Adjustment	Supply side "Guide roller" variable in the − direction (raises "Guide roller") to flatten envelope.	Take-up side "Guide roller" variable in the − direction (raises "Guide roller") to flatten envelope.

Fig.-12

6. AUDIO CONTROL HEAD HEIGHT/AUDIO CONTROL HEAD TILT ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
AUDIO OUTPUT (J401, CN407 pin ①)	Oscilloscope AC voltmeter	PLAY (SP) MODE Test tape TTV-P1 or TTV-N1

ADJ. Location	ADJ. Value
Height adjustment nut Azimuth adjustment screw	Maximum level (AC voltmeter)
Tilt adjustment screw	

TEST EQUIPMENT CONNECTING DIAGRAMS

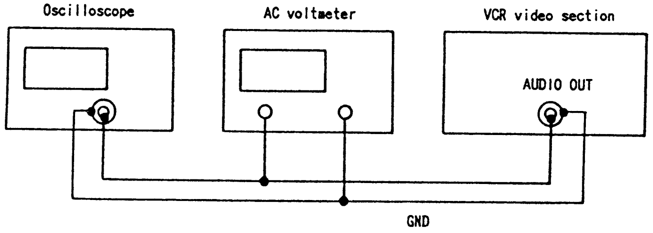


Fig. − 13

1. Connect the equipment as shown in Figure − 13.

2. Confirm that the running between the "Take − up guide roller" and the "ACE head" has no slack. If the tape has slack, take it up by turning the "Tilt adjustment screw Ⓒ". (See Figure − 15)
   Then readjust "Guide roller" height in section 2 and the "X value" in section 4.

3. After confirming on the oscilloscope that a 1kHz audio signal is being output by playing back TTV − P1 or TTV − N1 test tape, adjust the "Height adjustment nut Ⓐ" so that the AC voltmeter's reading is brought to its maximum level. (See Figure − 7)

4. Adjust the "Azimuth adjustment screw Ⓑ" so that the AC voltmeter's reading is brought to its maximum level. (See Figure − 7)

7. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
AUDIO OUTPUT (J401, CN407 pin ①)	Oscilloscope AC voltmeter	PLAY (SP) MODE Test tape TTV – P2 or TTV-N2

ADJ. Location	ADJ. Value
Azimuth adjustment screw	Maximum level (AC voltmeter)

Fig.-14

TEST EQUIPMENT CONNECTING DIAGRAMS

Connect equipment as shown in Figure – 13.

1. After confirming on the oscilloscope that a 6kHz audio signal is being output by playing back TTV – P2 or TTV – N2 test tape, adjust the "Azimuth adjustment screw Ⓑ" so that the AC voltmeter's reading or oscilloscope waveform is brought to its maximum level. (See Figure – 15)

Note : Fix the screw Ⓑ and Ⓒ with lock paint after readjustment.

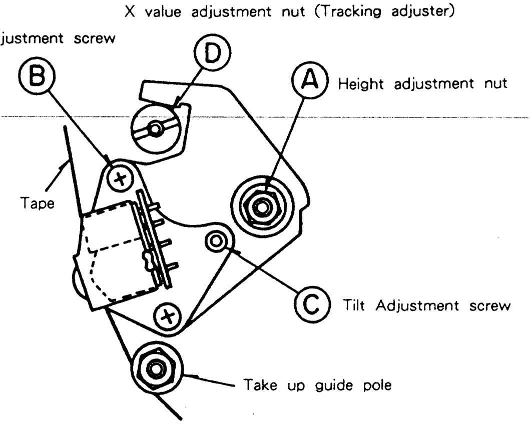
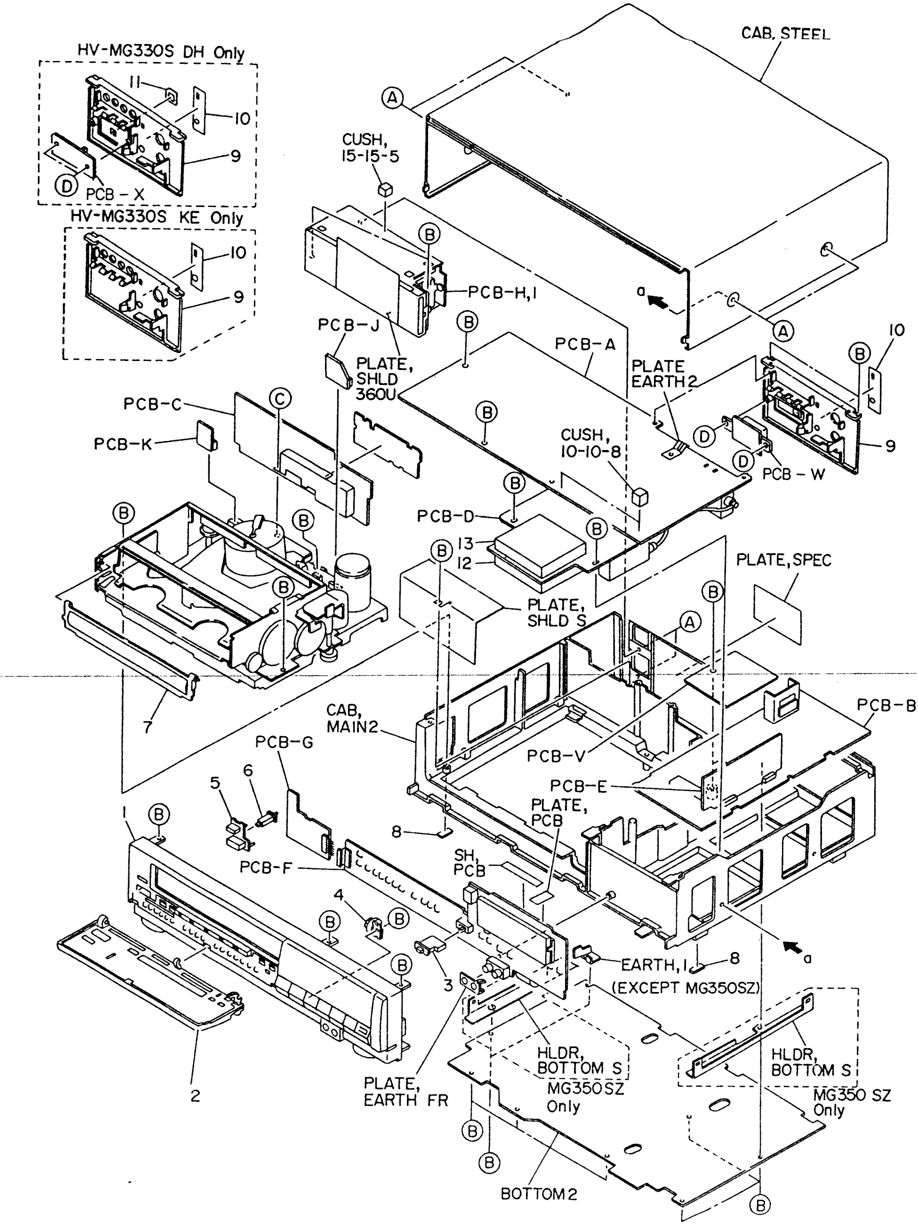

X value adjustment nut (Tracking adjuster)
Azimuth adjustment screw
Ⓑ
Ⓓ
Ⓐ Height adjustment nut
Tape
Ⓒ Tilt Adjustment screw
Take up guide pole

Fig. – 15

MECHANICAL EXPLODED VIEW 1／1

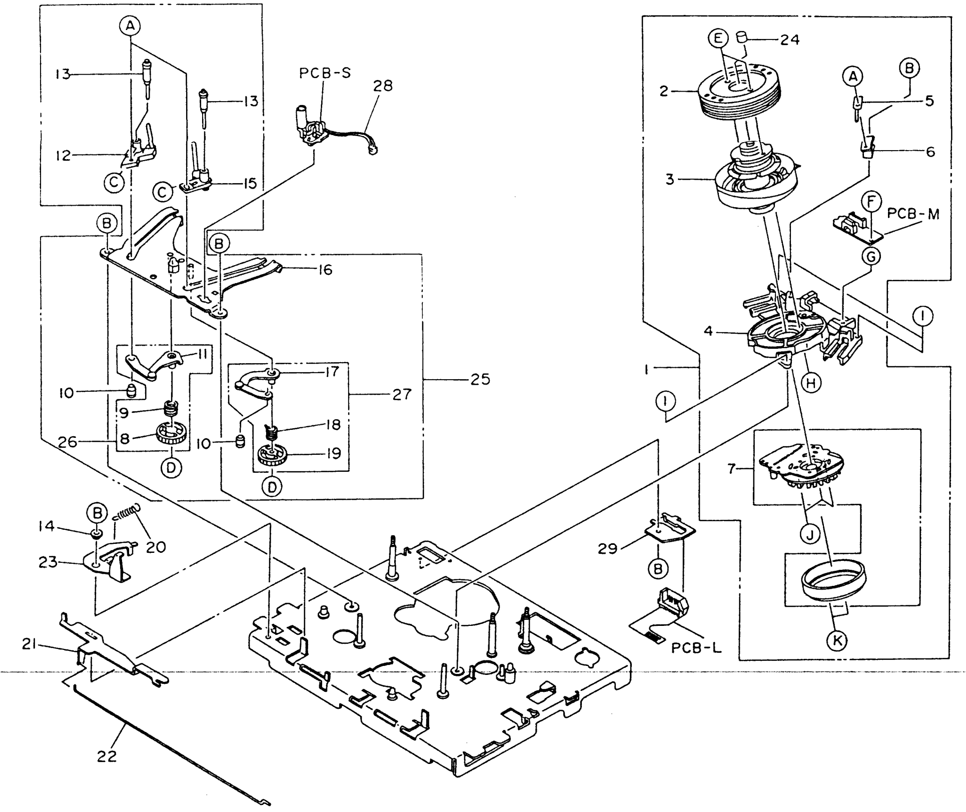

HV-MG330S DH Only
11
10
9
PCB－X
HV-MG330S KE Only
CAB, STEEL
CUSH, 15-15-5
PCB－H, I
a
PCB－J
PLATE, SHLD 360U
PCB－A
PLATE EARTH 2
10
PCB－C
PCB－K
CUSH, 10-10-8
PCB－W
PCB－D
13
12
PLATE, SPEC
PLATE, SHLD S
PCB－B
CAB, MAIN2
PCB－V
PCB－G
PCB－E
PLATE, PCB
7
5
6
8
1
SH, PCB
PCB－F
4
3
EARTH, I
(EXCEPT MG350SZ)
HLDR, BOTTOM S
MG350SZ Only
HLDR, BOTTOM S
MG350 SZ Only
PLATE, EARTH FR
2
BOTTOM 2
A
B
C
D

MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	09-057-200-010		CABI FRONT ASSY〈MG330S DH, KE〉
1	09-057-199-010		CABI FRONT ASSY〈NG350S K, Z〉
2	09-057-198-010		DOOR ASSY〈NG330S DH, KE〉
2	09-057-197-010		DOOR ASSY〈MG350S K, Z〉
3	80-JU4-018-019		KNOB, SLIDE
4	87-063-144-019		OIL-DMPR 37
5	80-JU4-004-019		KEY, POWER
6	80-JU4-007-019		GUIDE, LIGHT PO
7	80-JU4-016-119		DOOR, CASSE 4S
8	80-JU4-221-019		FELT FOOT S
9	89-JU5-011-319		PANEL, JACK〈MG330S KE〉
9	80-JU4-054-019		PANEL, JACK〈MG350S K, Z〉
9	80-JU4-035-019		PANEL, JACK〈MG330S DH〉
10	80-JU4-058-010		PLATE, JACK〈MG350S K, Z〉
10	89-JU5-040-010		PLATE, JACK〈MG330S DH〉
10	80-JU6-007-110		PLATE, JACK〈MG330S KE〉
11	89-JU4-036-010		PLATE, SW DH 330〈MG330S DH〉
12	80-JU4-204-010		SHLD, D1
13	80-JU4-205-010		SHLD, D2
A	87-067-660-019		BVT2+3-8W/O SLOT BLK
B	87-067-680-019		BVIT3B+3-10
C	87-067-686-019		BVIT3+2. 6-8
D	87-067-579-019		BVT 2+3-8 W/O〈EXCEPT MG330S KE〉

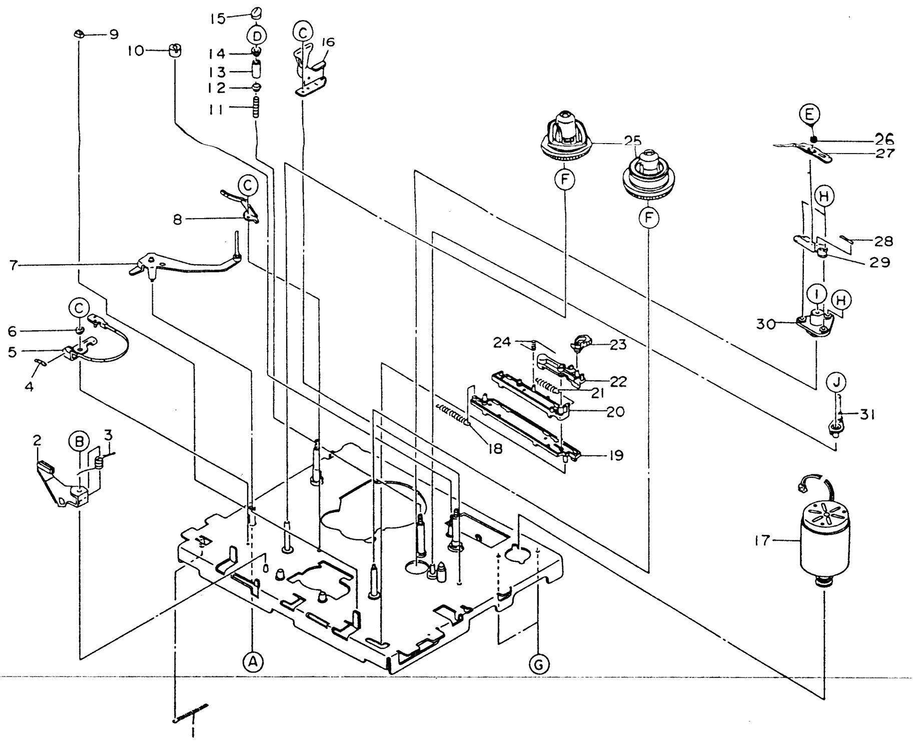
VIDEO MECHANISM EXPLODED VIEW 1/7



VIDEO MECHANISM PARTS LIST 1/7

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S8-059-825-0A0		CYLINDER ASSY
2	S8-059-010-180		UPPER DRUM TPA3-012
3	S8-059-013-040		LOWER DRUM ASSY
4	S8-059-010-010		CYLINDER MOUNT
5	S8-059-010-540		DRUM EARTH FLAT SPRING
6	S8-059-010-020		DRUM EARTH BRACKET
7	S6-004-030-240		MOTOR TM85
8	S8-059-030-060		T LOADING GEAR L
9	S8-059-030-080		LOADING GEAR SPRING L
10	S8-059-030-140		LOADING BOSS
11	S8-059-035-020		LOADING PLATE L SEMI ASSY
12	S8-059-030-040		LOADING BLOCK L
13	S8-000-030-370		ROLLER POST ST
14	S8-059-060-180		COLLAR
15	S8-059-030-050		LOADING BLOCK R
16	S8-059-035-010		LOADING BASE SEMI ASSY
17	S8-059-035-030		LOADING PLATE R SEMI ASSY
18	S8-059-030-090		LOADING GEAR SPRING R
19	S8-059-030-070		T LOADING GEAR R
20	S8-059-130-140		REC LEVER SPRING
21	S8-059-130-070		REC ACTUATOR
22	S8-059-130-110		REC ACTUATE SPOKE
23	S8-059-130-060		REC LEVER
24	S8-059-010-260		DRUM EARTH
25	S8-059-033-010		LOADING BASE ASSY
26	S8-059-033-020		LOADING GEAR L ASSY
27	S8-059-033-030		LOADING GEAR R ASSY
28	S8-059-133-030		LAMP ASSY
29	S8-059-010-710		CONNECTOR BRACKET
A	S9-665-000-000		CUP SCRW 2.6X3
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-C17-202-730		SCREW CAMERA
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-972-000-000		BIND TAMS SCREW 3X8
F	S9-973-000-000		W TAMS SCREW 2.6X6
G	S9-715-000-000		WASHER 2.6
H	S9-999-180-180		TAPPING SCREW
I	S9-205-000-000		C TAPPING SCREW 3X10
J	S9-055-000-000		SCREW 2.6X20
K	S9-999-200-350		COLLAR SCREW

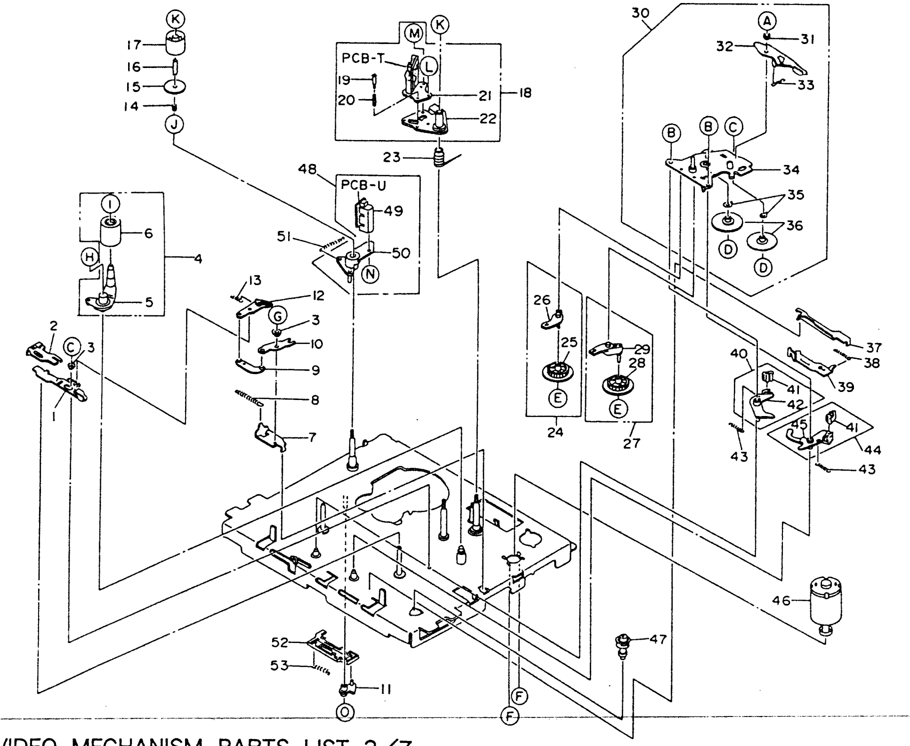
VIDEO MECHANISM EXPLODED VIEW 2/7



VIDEO MECHANISM PARTS LIST 2/7

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S8-059-080-200		BT ACTUATE PLATE SPRING
2	S8-059-103-040		S SOFT BRAKE ASSY
3	S8-059-100-220		S SOFT BRAKE SPRING
4	S8-059-080-170		BAND HOLDER SPRING
5	S8-059-083-020		BT BAND ASSY
6	S8-059-080-150		BAND HOLDER COLLAR
7	S8-059-085-010		BT ARM SEMI ASSY
8	S8-059-080-090		BACK TENSION SUPPORT
9	S8-059-020-230		DAMPER RUBBER
10	S8-059-020-290		TRACKING ADJUSTER
11	S8-059-020-260		TAPE GUIDE SPRING
12	S8-000-030-290		TAPE GUIDE FLANGE D
13	S8-000-030-140		TAPE GUIDE
14	S8-000-032-8A0		TAPE GUIDE FLANGE C
15	S8-000-030-190		GUIDE CAP
16	S8-059-023-010		OPEN ANGLE ASSY
17	S8-059-073-020		CAPSTAN MOTOR ASSY
18	S8-059-100-100		BRAKE ACTUATE BASE SPRING
19	S8-059-100-090		BRAKE ACTUATE BASE
20	S8-059-100-110		BRAKE PLATE
21	S8-059-100-120		BRAKE PLATE SPRING
22	S8-059-100-130		TRIGGER LEVER
23	S8-059-100-140		TRIGGER HOOK
24	S8-059-100-230		TRIGGER LEVER SPRING
25	S8-059-053-010		REEL ASSY
26	S8-059-170-100		RG SLIDE PLATE COLLAR
27	S8-059-170-030		RG SLIDE PLATE
28	S8-059-170-110		RG SLIDE SPRING
29	S8-059-170-090		RG SLIDE BASE
30	S8-059-073-010		METAL HOUSING ASSY
31	S8-059-175-020		RG ARM SEMI ASSY
A	S9-999-030-150		PW CUT 2.1X4X0.5
B	S9-876-000-000		PW CUT 2.1X5X0.5
C	S9-191-000-000		C TAPPING SCREW 2.6X4
D	S9-453-000-000		NUT 3.0
E	S9-077-000-000		TAMS SCREW 2X4
F	S9-969-000-000		D WASHER 3.1X6X0.6
G	S9-105-000-000		TAMS SCREW 3X4
H	S9-195-000-000		C TAPPING SCREW 2.6X8
I	S9-999-060-030		NYLON WASHER 2.92X5X0.5
J	S9-884-000-000		PW 2.6X6X0.5 CUT

VIDEO MECHANISM EXPLODED VIEW 3/7

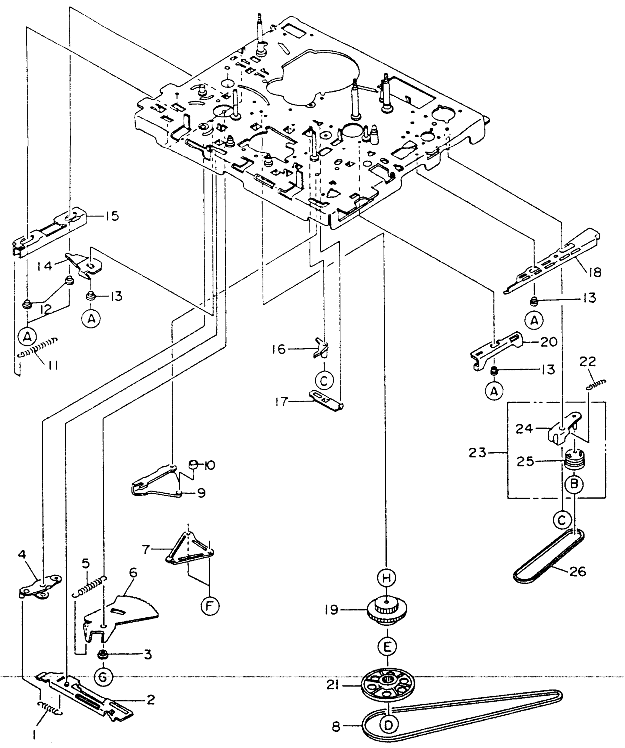


VIDEO MECHANISM PARTS LIST 3/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-060-240		P SLIDE PLATE A
2	S8-059-060-250		P SLIDE PLATE B
3	S8-059-060-180		COLLAR
4	S8-059-063-010		PINCH ROLLER ARM ASSY
5	S8-059-065-010		PINCH ROLLER ARM SEMI ASSY
6	S8-000-090-220		PINCH ROLLER A
7	S8-059-060-190		P ANGLE HOLDER
8	S8-059-060-200		P-SPRING, ROLLER
9	S8-059-060-060		JOINT PLATE
10	S8-059-060-050		P ACTUATE ANGLE
11	S8-059-040-110		FE ACTUATE LEVER
12	S8-059-060-040		P ACTUATE ARM
13	S8-059-060-090		P-SPRING, ACTUATE ARM
14	S8-059-040-090		TAPE GUIDE FLANGE SPRING
15	S8-059-040-070		TAPE GUIDE FLANGE A
16	S8-059-040-060		IMPEDANCE ROLLER SLEEVE
17	S8-059-040-050		IMPEDANCE ROLLER
18	S8-059-043-080		HEAD BASE ASSY
19	S8-000-060-260		AZIMUTH SPRING SCREW
20	S8-000-060-040		AZIMUTH SPRING
21	S6-204-150-060		ACE HEAD HV225211
22	S8-059-045-020		HEAD BASE SEMI ASSY
23	S8-059-040-150		HEAD SPRING
24	S8-059-093-140		P GEAR ASSY
25	*S8-059-092-0A0*		*PLAY GEAR*
26	S8-059-093-030		P GEAR ARM ASSY
27	S8-059-093-150		RF GEAR ASSY
28	S8-059-092-2A0		FF GEAR
29	S8-059-093-040		RF GEAR ARM ASSY
30	S8-059-093-160		SUB PLATE ASSY
31	S8-059-100-070		T SOFT BRAKE ARM COLLAR
32	S8-059-103-030		T SOFT BRAKE ASSY
33	S8-059-100-060		T-SPRING, SOFT BRAKE ARM
34	S8-059-095-010		SUB PLATE SEMI ASSY
35	---		WAVE WASHER

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
36	S8-059-090-6A0		REEL DRIVE GEAR
37	S8-059-100-160		BRAKE LIFTER
38	S8-059-100-180		L BRAKE ACTUATOR SPRING
39	S8-059-100-170		L BRAKE ACTUATOR
40	S8-059-103-010		S BRAKE ARM ASSY
41	S8-059-100-190		BRAKE SHOE
42	S8-059-100-010		S BRAKE ARM
43	S8-059-100-020		BRAKE ARM SPRING
44	S8-059-103-020		T BRAKE ARM ASSY
45	S8-059-100-030		T BRAKE ARM
46	S8-059-113-010		LOADING MOTOR ASSY
47	S8-059-113-020		TRIGGER BEARING ASSY
48	S8-059-043-020		FE PLATE ASSY
49	S6-204-150-030		FE HEAD HV113006
50	S8-059-040-040		FE PLATE
51	S8-059-040-080		FE PLATE SPRING
52	S8-059-040-100		FE SLIDE PLATE
53	S8-059-040-120		FE ACTUATE SPRING
A	S9-974-000-000		SL FH SCREW 2X3
B	S9-077-000-000		TAMS SCREW 2X4
C	S9-192-000-000		C TAPPING SCREW 2.6X5
D	S9-500-000-000		E RING S1.5
E	S9-743-000-000		PW CUT 1.6X3.8X0.3
F	S9-105-000-000		C TAPPING SCREW 3X4
G	S9-096-000-000		TAMS SCREW 2.6X4
H	S9-999-030-110		PW CUT 5X8X0.5
I	S9-038-000-000		SCREW 2.6X4
J	S9-337-000-000		PLANE WASHER 3X8X0.5
K	S9-953-000-000		NYLON NUT M3
L	S9-999-200-250		SCREW 3X6(SHAPE TYPE)
M	S9-705-000-000		LONG LOCK SCREW 2.6X7
N	S9-114-000-000		FLANGE BIND 2X3
O	S9-876-000-000		PW CUT 2.1X5X0.5

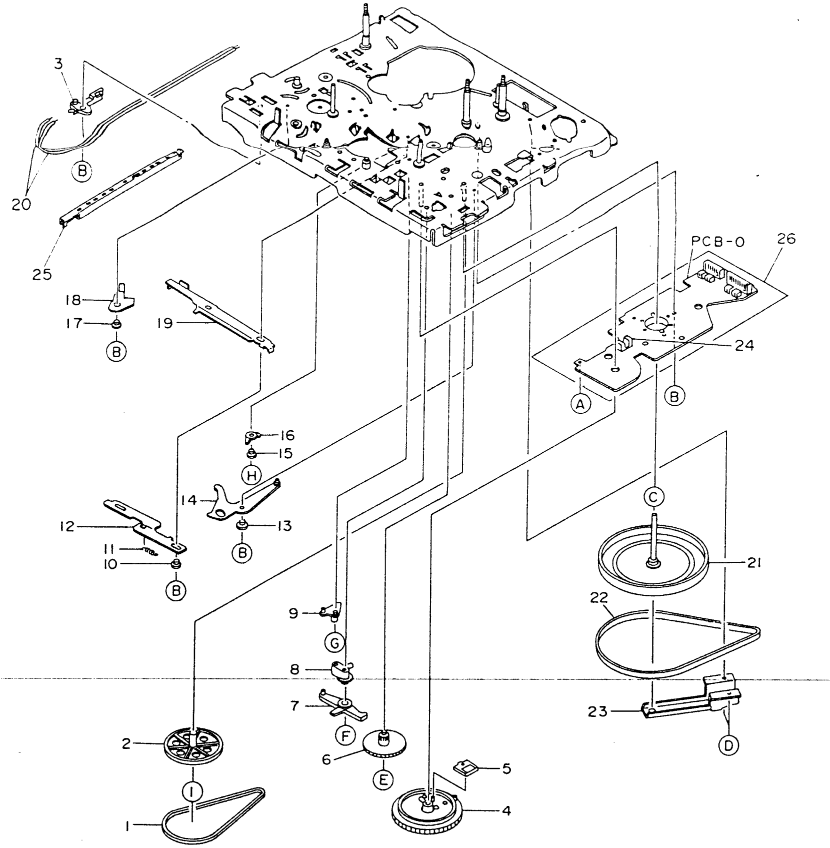
VIDEO MECHANISM EXPLODED VIEW 4/7



VIDEO MECHANISM PARTS LIST 4/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-120-050		LOADING ACTUATOR SPRING
2	S8-059-125-030		LOADING ACTUATOR SEMI ASSY
3	S8-059-120-100		L GEAR PLATE COLLAR
4	S8-059-125-020		LOADING ACTUATE LVR SEMI ASSY
5	S8-059-120-120		L GEAR PLATE SPRING
6	S8-059-120-090		L GEAR PLATE
7	S8-059-120-110		LOADING LEVER REINFORCE PLATE
8	S8-059-090-170		DRIVE BELT
9	S8-059-125-010		LOADING LEVER SEMI ASSY
10	S8-059-120-130		CAM ROLLER
11	S8-059-080-130		BACK TENSION SPRING
12	S8-059-080-210		BT ACTUATE PLATE COLLAR
13	S8-059-060-180		COLLAR
14	S8-059-080-180		BT ACTUATE LEVER
15	S8-059-080-190		BT ACTUATE PLATE
16	S8-059-170-010		RG ACTUATE ARM
17	S8-059-170-020		ORG ACTUATE
18	S8-059-150-070		L BRAKE PLATE
19	S8-059-093-100		CLUTCH ASSY
20	S8-059-150-080		EJECT ACTUATOR
21	S8-059-093-010		MIDDLE PULLEY ASSY
22	S8-059-150-110		IDLER ARM SPRING
23	S8-059-153-030		E IDLER ARM ASSY
24	S8-059-155-020		E IDLER ARM SEMI ASSY
25	S8-059-150-150		EJECT PULLEY
26	S8-059-150-060		FL BELT
A	S9-192-000-000		C TAPPING SCREW 2.6X5
B	S9-743-000-000		PW CUT 1.6X3.8X0.3
C	S9-876-000-000		PW CUT 2.1X5X0.5
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-999-060-040		NYLON WASHER 2.98X6X0.3
F	S9-078-000-000		TAMS SCREW 2X5
G	S9-203-000-000		C TAPPING SCREW 3X6
H	S9-W03-301-800		NYLON WASHER 3.3X6X0.3

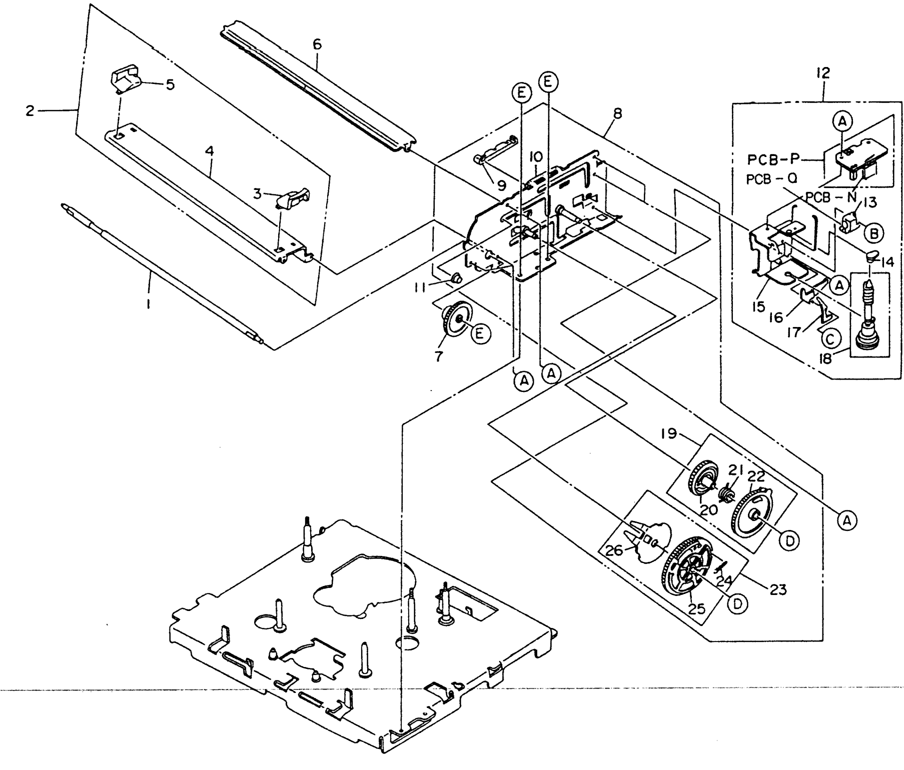
VIDEO MECHANISM EXPLODED VIEW 5/7



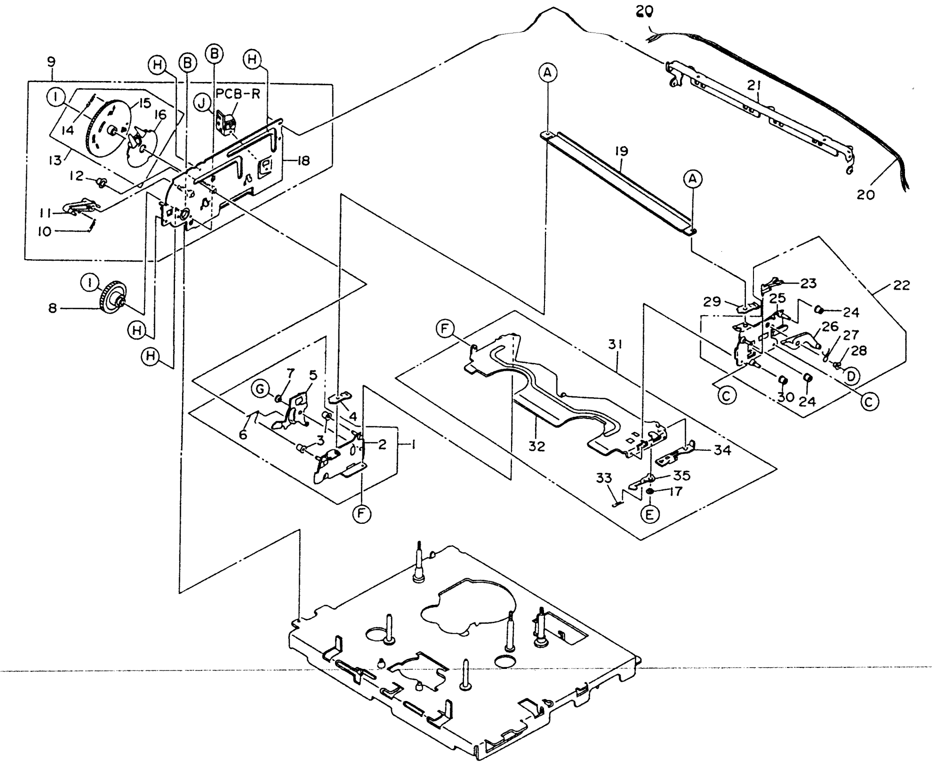
VIDEO MECHANISM PARTS LIST 5/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-110-060		LOADING BELT
2	S8-059-110-030		LOADING PULLEY
3	S6-401-011-770		LEAF SWITCH MCV-00321 MVDO
4	S8-059-110-010		LOADING CAM
5	S8-059-110-020		S BRUSH
6	S8-059-110-040		LOADING GEAR
7	S8-059-110-140		EJECT ARM
8	S8-059-110-130		BRAKE ACTUATE ARM
9	S8-059-110-120		SEARCH ARM B
10	S8-059-060-110		P SLIDER COLLAR
11	S8-059-060-230		P-SPRING SLIDER
12	S8-059-060-100		P SLIDER
13	S8-059-060-170		P CAM LEVER COLLAR
14	S8-059-065-020		P CAM LEVER SEMI ASSY
15	S8-059-060-130		P CRANK COLLAR
16	S8-059-060-120		P CRANK
17	S8-059-060-180		COLLAR
18	S8-059-080-230		BT RETURN LEVER
19	S8-059-080-100		BT CHANGE PLATE
20	---		WIRE
21	S8-059-070-140		FLYWHEEL CAPSTAN
22	S8-059-070-100		MAIN BELT
23	S8-059-073-030		FL ANGLE ASSY
24	S6-808-080-030		REEL SENSOR
25	---		WIRE HOLDER
26	S8-059-133-020		BASE PLATE ASSY
A	S9-803-000-000		S TAPPING SCREW 2.6X5
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-912-000-000		PW 3.1X6X0.5
D	S9-202-000-000		C TAPPING SCREW 3X5
E	S9-876-000-000		PW CUT 2.1X5X0.5
F	S9-999-030-100		PW CUT 2.6X8X0.5
G	S9-884-000-000		PW CUT 2.6X6X0.5
H	S9-999-180-100		C TAPPING FH SCREW 2.6X4
I	S9-999-700-140		HL WASHER CUT 1.7X4X0.3

VIDEO MECHANISM EXPLODED VIEW 6/7



VIDEO MECHANISM EXPLODED VIEW 7/7



VIDEO MECHANISM PARTS LIST 6/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-160-600		SYNCHRONIZE SHAFT
2	S8-059-163-070		FRONT ANGLE ASSY
3	S8-059-160-250		TAPE GUIDE R
4	S8-059-160-180		FRONT ANGLE
5	S8-059-160-240		TAPE GUIDE L
6	S8-000-220-070		UPPER PLATE
7	S8-059-160-170		SYNCHRONIZE GEAR A
8	S8-059-163-220		FRAME R ASSY
9	S8-000-220-260		OPEN LEVER GUIDE
10	S8-059-165-040		FRAME R SEMI ASSY
11	S8-000-220-240		GUIDE SLEEVE
12	S8-059-163-180		C LOAD BRACKET ASSY
13	---		SENSOR P.C.B RM ASSY
14	S8-059-160-060		F WORM BEARING A
15	S8-059-165-060		C LOAD BRACKET SEMI ASSY
16	S8-059-160-340		IN SW LEVER
17	S8-059-160-330		S SW LEVER
18	S8-059-163-190		F LOADING CLUTCH ASSY
19	S8-059-163-210		WORM WHEEL ASSY
20	S8-059-160-450		FRICTION GEAR
21	S8-059-160-310		FRICTION SPRING
22	S8-059-160-360		WORM WHEEL
23	S8-059-163-120		LIFT GEAR R ASSY
24	S8-000-220-450		LP SPRING
25	S8-000-220-150		LIFT GEAR R
26	S8-000-220-110		LIFT ARM
A	S9-096-000-000		TAMS SCREW 2.6X4
B	S9-078-000-000		TAMS SCREW 2X5
C	S9-743-000-000		PW CUT 1.6X3.8X0.3
D	S9-504-000-000		E RING S2.5
E	S9-192-000-000		C TAPPING SCREW 2.6X5

VIDEO MECHANISM PARTS LIST 7/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-163-090		SIDE PLATE L ASSY
2	S8-059-165-030		SIDE PLATE L SEMI ASSY
3	S8-000-220-750		GUIDE ROLLER
4	S8-059-160-280		CASSETTE PUSH PLATE
5	S8-000-220-660		C LOCK PLATE L
6	S8-059-160-300		LOCK PLATE SPRING L
7	S8-000-190-630		LOCK PLATE COLLAR
8	S8-059-160-170		SYNCHRONIZE GEAR A
9	S8-059-163-130		FRAME L ASSY
10	S8-000-220-470		LIFT LEVER SPRING
11	S8-000-220-760		LIFT LEVER
12	S8-000-220-240		GUIDE SLEEVE
13	S8-059-163-140		LIFT GEAR L ASSY
14	S8-000-220-450		LP SPRING
15	S8-000-220-140		LIFT GEAR L
16	S8-000-220-110		LIFT ARM
17	S8-059-060-180		COLLAR
18	S8-059-165-050		FRAME L SEMI ASSY
19	S8-000-220-650		TOP STAY
20	---		END SENSOR WIRE
21	S8-059-160-090		REAR ANGLE
22	S8-059-163-080		SIDE PLATE R ASSY
23	S8-000-220-160		LOCK RELEASE LEVER
24	S8-000-220-120		C LOCK PLATE A
25	S8-059-165-020		SIDE PLATE R SEMI ASSY
26	S8-000-220-250		OPEN LEVER
27	S8-000-220-440		OPEN LEVER SPRING
28	S8-000-220-420		OPEN LEVER COLLAR
29	S8-059-160-280		CASSETTE PUSH PLATE
30	S8-000-220-230		GUIDE ROLLER
31	S8-059-163-060		CASSETTE HOLDER ASSY
32	S8-000-220-030		CASSETTE HOLDER
33	S8-059-160-290		LOCK SPRING
34	S8-000-220-130		SLIDE PLATE
35	S8-059-163-170		FRONT LOADING ASSY
A	S9-833-000-000		SCREW 2.3X2
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-556-000-000		SCREW 2.6X3
D	S9-967-000-000		SL SCREW 2X4
E	S9-968-000-000		SL SCREW 2.6X3
F	S9-991-000-000		SCREW 2.3X2.5
G	S9-966-000-000		SL SCREW 2X2.5
H	S9-096-000-000		TAMS SCREW 2.6X4
I	S9-504-000-000		E RING S2.5
J	S9-099-000-000		TAMS SCREW 2.6X7

■ ACCESSORIES／PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-JUS-904-019		IB, 350SZ〈Z〉
2	83-JUS-905-019		IB, 350SK〈K〉
3	83-JUS-906-019		IB, 330SDH, KE〈DH, KE〉
4	80-JU4-951-019		RC-TMG330〈Z, K, DH, KE〉
5	87-034-594-019		AC CORD SET E〈DH, KE〉
6	87-034-796-019		CORD, RF PAL S〈K, DH, KE〉
7	87-047-117-01B		BATT, SUM-3 ID〈EXCEPT MD36〉
8	87-050-033-019		AC CORD SET ASSY, K3P〈K〉
9	87-050-036-010		AC CODE SET ASSY Z〈Z〉
10	87-050-037-010		CORD ASSY, RF PAL Z〈Z〉

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
ｻｰｼﾞｻﾌﾟﾚｯｻ	SERGESUPPRESSOR
ｾﾗｺﾝ	CAP, CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTORL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOADING MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ｼﾞｸｱｰﾑ	ARM, SHAFT
ｼﾞｸｶﾞｲﾄﾞ	GUIDE, SHAFT
ｽﾄﾗｯﾌﾟ	STRAP
ﾄｸﾅｲ	S-SCRW
ﾋﾝｼﾞ	HINGE
ﾋﾝｼﾞﾋﾞｽ	S-SCRW
ﾋﾞｽｾﾚｰﾄ	SCRW, SERRART